

1. Understanding modern macroeconomics

Economic knowledge is historically determined ... what we know today about the economic system is not something we discovered this morning but is the sum of all our insights, discoveries and false starts in the past. Without Pigou there would be no Keynes; without Keynes no Friedman; without Friedman no Lucas; without Lucas no ... (Blaug, 1991a, pp. x–xi)

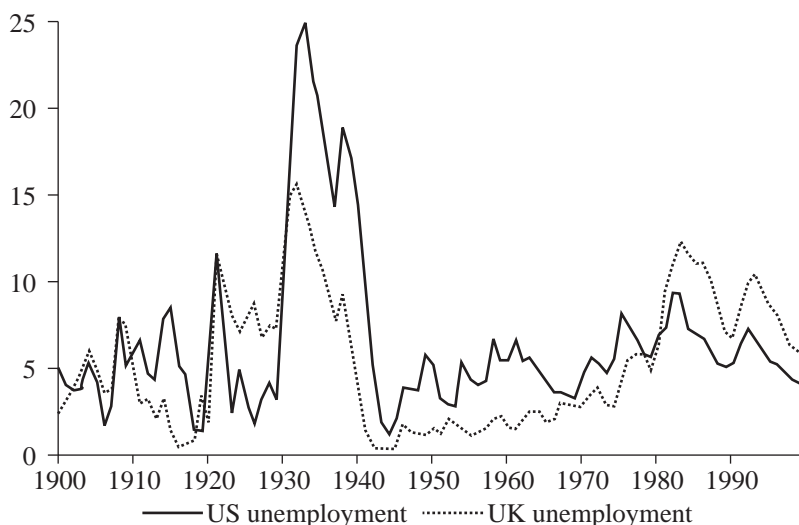
1.1 Macroeconomics Issues and Ideas

Macroeconomics is concerned with the structure, performance and behaviour of the economy as a whole. The prime concern of macroeconomists is to analyse and attempt to understand the underlying determinants of the main aggregate trends in the economy with respect to the total output of goods and services (GDP), unemployment, inflation and international transactions. In particular, macroeconomic analysis seeks to explain the cause and impact of short-run fluctuations in GDP (the business cycle), and the major determinants of the long-run path of GDP (economic growth). Obviously the subject matter of macroeconomics is of crucial importance because in one way or another macroeconomic events have an important influence on the lives and welfare of all of us. It is difficult to overstate just how important satisfactory macroeconomic performance is for the well-being of the citizens of any country. An economy that has successful macroeconomic management should experience low unemployment and inflation, and steady and sustained economic growth. In contrast, in a country where there is macroeconomic mismanagement, we will observe an adverse impact on the living standards and employment opportunities of the citizens of that country. In extreme circumstances the consequences of macroeconomic instability have been devastating. For example, the catastrophic political and economic consequences of failing to maintain macroeconomic stability among the major industrial nations during the period 1918–33 ignited a chain of events that contributed to the outbreak of the Second World War, with disastrous consequences for both humanity and the world economy.

Because macroeconomic performance and policies are closely connected, the major macroeconomic issues are also the subject of constant media attention and inevitably play a central role in political debate. The influence of the

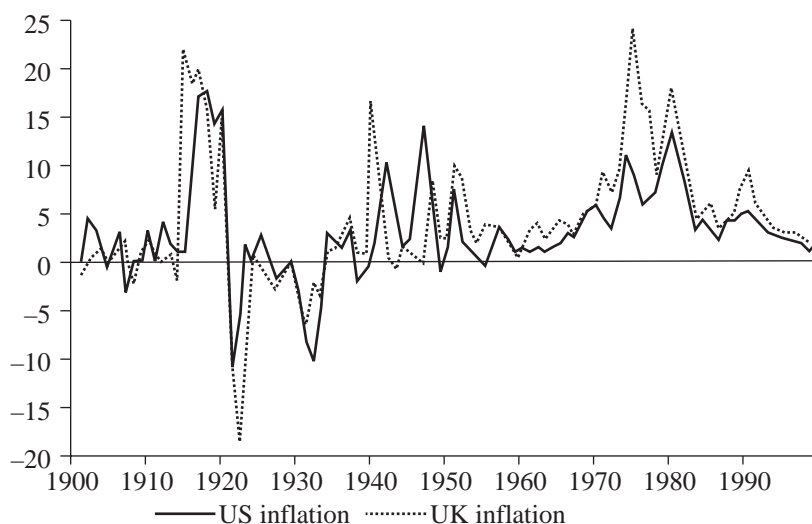
economic performance of the economy on political events is particularly important and pertinent in liberal democracies during election campaigns. Research has confirmed that in the post-war period the outcome of elections has in many cases been affected by the performance of the economy as measured by three main macroeconomic indicators – inflation, unemployment and economic growth. While there are obviously many non-economic factors that influence the ‘happiness’ of voters, it is certainly the case that economic variables such as employment and income growth are an important explanatory factor in voting behaviour. Furthermore, ideological conflict often revolves around important macroeconomic issues (see, for example, Frey and Schneider, 1988; Alesina and Roubini with Cohen, 1997; Drazen, 2000a).

To get some idea of how two major economies have performed with respect to unemployment and inflation consider Figures 1.1 and Figure 1.2. Here we can clearly see that the pathologies of high unemployment and inflation occasionally take on proportions that are well above the norm. Figure 1.1 traces the path of unemployment in the US and UK economies for the twentieth century. The impact of the Great Depression (1929–33) on unemployment is dramatically illustrated for both countries although the increase in unemployment in the USA was much more dramatic than in the UK, where unemployment was already high before 1929 (see section 1.4 below and Chapter 2).



Source: Britton (2002).

Figure 1.1 Unemployment in the US and UK economies over the course of the twentieth century



Source: Britton (2002).

Figure 1.2 Inflation in the US and UK economies over the course of the twentieth century

Figure 1.2 shows how inflation has varied in the US and the UK economies throughout the twentieth century. Notable features here include: the dramatic increase in inflation associated with the two world wars (1914–18, 1939–45) and the Korean War (1950–53); the deflations of the early 1920s and 1930s; and the ‘Great Inflation’ of the 1970s (Taylor, 1992a). As DeLong (1997) notes, ‘the 1970s are America’s only peacetime outburst of inflation’.

Several questions confront economists with respect to these exceptional episodes: were they due to specific large shocks, the failure of adjustment mechanisms, the result of policy errors, or some combination of all three? Finding answers to these questions is important because the contemporary conduct of stabilization policy must reflect the lessons of history and the theoretical and empirical research findings of economists.

1.2 The Role of Economic Theory and Controversy

An understanding by government policy makers of the factors which determine the long-run growth of an economy and the short-run fluctuations that constitute the business cycle is essential in order to design and implement economic policies which have the potential vastly to improve economic welfare. The primary aim of macroeconomic research is to develop as comprehensive an

understanding as possible of the way the economy functions and how it is likely to react to specific policies and the wide variety of demand and supply shocks which can cause instability. Macroeconomic theory, consisting of a set of views about the way the economy operates, organized within a logical framework (or theory), forms the basis upon which economic policy is designed and implemented. Theories, by definition, are simplifications of reality. This must be so given the complexity of the real world. The intellectual problem for economists is how to capture, in the form of specific models, the complicated interactive behaviour of millions of individuals engaged in economic activity. Huntington (1996) has succinctly outlined the general case for explicit modelling as an essential aid to thought:

Simplified paradigms or maps are indispensable for human thought. On the one hand, we may explicitly formulate theories or models and consciously use them to guide behaviour. Alternatively, we may deny the need for such guides and assume that we will act only in terms of specific 'objective' facts, dealing with each case 'on its own merits'. If we assume this, however, we delude ourselves. For in the back of our minds are hidden assumptions, biases, and prejudices that determine how we perceive reality, what facts we look at, and how we judge their importance and merits.

Accordingly, explicit or implicit models are necessary to make sense of a very complex world. By definition economic theories and specific models act as the laboratories we otherwise lack in the social sciences. They help economists decide what are the important factors that need to be analysed when they run thought experiments about the causes and consequences of various economic phenomena. A successful theory will enable economists to make better predictions about the consequences of alternative courses of action thereby indicating the policy regime most likely to achieve society's chosen objectives.

The design of coherent economic policies aimed at achieving an acceptable rate of economic growth and reduced aggregate instability depends then on the availability of internally consistent theoretical models of the economy which can explain satisfactorily the behaviour of the main macro variables and are not rejected by the available empirical evidence. Such models provide an organizing framework for reviewing the development and improvement of institutions and policies capable of generating reasonable macroeconomic stability and growth. However, throughout the twentieth century, economists have often differed, sometimes substantially, over what is to be regarded as the 'correct' model of the economy. As a result, prolonged disagreements and controversies have frequently characterized the history of macroeconomic thought (Woodford, 2000).

The knowledge that macroeconomists have today about the way that economies function is the result of a prolonged research effort often involving

intense controversy and an ever-increasing data bank of experience. As Blanchard (1997a) points out:

Macroeconomics is not an exact science but an applied one where ideas, theories, and models are constantly evaluated against the facts, and often modified or rejected ... Macroeconomics is thus the result of a sustained process of construction, of an interaction between ideas and events. What macroeconomists believe today is the result of an evolutionary process in which they have eliminated those ideas that failed and kept those that appear to explain reality well.

Taking a long-term perspective, our current understanding of macroeconomics, at the beginning of the twenty-first century, is nothing more than yet another chapter in the history of economic thought. However, it is important to recognize from the outset that the evolution of economists' thinking on macroeconomics has been far from smooth. So much so that many economists are not averse to making frequent use of terminology such as 'revolution' and 'counter-revolution' when discussing the history of macroeconomics. The dramatic decline of the Keynesian conventional wisdom in the early 1970s resulted from both the empirical failings of 'old Keynesianism' and the increasing success of critiques ('counter-revolutions') mounted by monetarist and new classical economists (Johnson, 1971; Tobin, 1981, 1996; Blaug, 1997; Snowden and Vane, 1996, 1997a, 1997b).

In our view, any adequate account of the current state of macroeconomics needs to explore the rise and fall of the old ideas and the state of the new within a comparative and historical context (see Britton, 2002). This book examines, compares and evaluates the evolution of the major rival stories comprising contemporary macroeconomic thought. We would maintain that the coexistence of alternative explanations and views is a sign of strength rather than weakness, since it permits mutual gains from intellectual trade and thereby improved understanding. It was John Stuart Mill who recognized, almost one hundred and fifty years ago, that all parties gain from the comparative interplay of ideas. Alternative ideas not only help prevent complacency, where 'teachers and learners go to sleep at their post as soon as there is no enemy in the field' (Mill, 1982, p. 105), but they also provide a vehicle for improved understanding whereby the effort to comprehend alternative views forces economists to re-evaluate their own views. Controversy and dialogue have been, and will continue to be, a major engine for the accumulation of new knowledge and progress in macroeconomics. We would therefore endorse Mill's plea for continued dialogue (in this case within macroeconomics) between the alternative frameworks and suggest that all economists have something to learn from each other. The macroeconomic problems that economists address and endeavour to solve are often shared.

That there is a wide variety of schools of thought in economics in general, and macroeconomics in particular, should not surprise us given the intrinsic difficulty and importance of the issues under investigation. While there are 'strong incentives in academia to differentiate products' (Blanchard and Fischer, 1989), there is no doubt that much of the controversy in macroeconomics runs deep. Of course, it is true that economists disagree on many issues, but they seem to do so more frequently, vociferously, and at greater length, in macroeconomics. In his discussion of why there is much controversy in macroeconomics Mayer (1994) identifies seven sources, namely, limited knowledge about how the economy works, the ever-widening range of issues that economists investigate, the need to take into account wider influences, such as political factors, and differences in the 'metaphysical cores, value judgements, social empathies and methodologies' of various economists. Knut Wicksell's (1958, pp. 51–2) contention that within economics 'the state of war seems to persist and remain permanent' seems most appropriate for contemporary macroeconomics. To a large extent this reflects the importance of the issues which macroeconomists deal with, but it also supports the findings of previous surveys of economists which revealed a tendency for consensus to be stronger on microeconomic compared to macroeconomic propositions (see, for example, Alston et al., 1992).

It is certainly true that in specific periods during the twentieth century the contemporary state of macroeconomic theory had the appearance of a battlefield, with regiments of economists grouped under different banners. However, it is our view that economists should always resist the temptation to embrace, in an unquestioning way, a one-sided or restrictive consensus 'because the right answers are unlikely to come from any pure economic dogma' (Deane, 1983). In addition, the very nature of scientific research dictates that disagreements and debate are most vocal at the frontier, as they should be, and, as Robert E. Lucas Jr argues (see interview at the end of Chapter 5), the responsibility of professional economists is 'to create new knowledge by pushing research into new, and hence necessarily controversial, territory. Consensus can be reached on specific issues, but consensus for a research area as a whole is equivalent to stagnation, irrelevance and death.' Furthermore, as Milton Friedman observes (see interview at the end of Chapter 4), 'science in general advances primarily by unsuccessful experiments that clear the ground'.

Macroeconomics has witnessed considerable progress since its birth in the 1930s. More specifically, any Rip Van Winkle economist who had fallen asleep in 1965, when the 'old Keynesian' paradigm was at its peak, would surely be impressed on waking up at the beginning of the twenty-first century and surveying the enormous changes that have taken place in the macroeconomics literature.

1.3 Objectives, Instruments and the Role of Government

In our historical journey we will see that macroeconomics has experienced periods of crisis. There is no denying the significant conflicts of opinion that exist between the different schools of thought, and this was especially evident during the 1970s and 1980s. However, it should also be noted that economists tend to disagree more over theoretical issues, empirical evidence and the choice of policy instruments than they do over the ultimate objectives of policy. In the opening statement of what turned out to be one of the most influential articles written in the post-war period, Friedman (1968a) gave emphasis to this very issue:

There is wide agreement about the major goals of economic policy: high employment, stable prices, and rapid growth. There is less agreement that these goals are mutually compatible or, among those who regard them as incompatible, about the terms at which they can and should be substituted for one another. There is least agreement about the role that various instruments of policy can and should play in achieving the several goals.

The choice of appropriate instruments in order to achieve the ‘major goals’ of economic policy will depend on a detailed analysis of the causes of specific macroeconomic problems. Here we encounter two main intellectual traditions in macroeconomics which we can define broadly as the classical and Keynesian approaches. It is when we examine how policy objectives are interconnected and how different economists view the role and effectiveness of markets in coordinating economic activity that we find the fundamental question that underlies disagreements between economists on matters of policy, namely, what is the proper role of government in the economy? The extent and form of government intervention in the economy was a major concern of Adam Smith (1776) in the *Wealth of Nations*, and the rejection of uncontrolled *laissez-faire* by Keynes is well documented. During the twentieth century the really big questions in macroeconomics revolved around this issue. Mankiw (1989) identifies the classical approach as one ‘emphasising the optimization of private actors’ and ‘the efficiency of unfettered markets’. On the other hand, the Keynesian school ‘believes that understanding economic fluctuations requires not just the intricacies of general equilibrium, but also appreciating the possibility of market failure’. Obviously there is room for a more extensive role for government in the Keynesian vision. In a radio broadcast in 1934, Keynes presented a talk entitled ‘Poverty and Plenty: is the economic system self-adjusting?’ In it he distinguished between two warring factions of economists:

On the one side are those that believe that the existing economic system is, in the long run, a self-adjusting system, though with creaks and groans and jerks and

interrupted by time lags, outside interference and mistakes ... On the other side of the gulf are those that reject the idea that the existing economic system is, in any significant sense, self-adjusting. The strength of the self-adjusting school depends on it having behind it almost the whole body of organised economic thinking of the last hundred years ... Thus, if the heretics on the other side of the gulf are to demolish the forces of nineteenth-century orthodoxy ... they must attack them in their citadel ... Now I range myself with the heretics. (Keynes, 1973a, Vol. XIII, pp. 485–92)

Despite the development of more sophisticated and quantitatively powerful techniques during the past half-century, these two basic views identified by Keynes have persisted. Witness the opening comments of Stanley Fischer in a survey of developments in macroeconomics published in the late 1980s:

One view and school of thought, associated with Keynes, Keynesians and new Keynesians, is that the private economy is subject to co-ordination failures that can produce excessive levels of unemployment and excessive fluctuations in real activity. The other view, attributed to classical economists, and espoused by monetarists and equilibrium business cycle theorists, is that the private economy reaches as good an equilibrium as is possible given government policy. (Fischer, 1988, p. 294)

It appears that many contemporary debates bear an uncanny resemblance to those that took place between Keynes and his critics in the 1930s. Recently, Kasper (2002) has argued that in the USA, the 1970s witnessed a strong revival in macroeconomic policy debates of a presumption in favour of *laissez-faire*, a clear case of ‘back to the future’.

In this book we are primarily concerned with an examination of the intellectual influences that have shaped the development of macroeconomic theory and the conduct of macroeconomic policy in the period since the publication of Keynes’s (1936) *General Theory of Employment, Interest and Money*. The first 25 years following the end of the Second World War were halcyon days for Keynesian macroeconomics. The new generation of macroeconomists generally accepted Keynes’s central message that a *laissez-faire* capitalist economy could possess equilibria characterized by excessive involuntary unemployment. The main policy message to come out of the *General Theory* was that active government intervention in order to regulate aggregate demand was necessary, indeed unavoidable, if a satisfactory level of aggregate output and employment were to be maintained. Although, as Skidelsky (1996a) points out, Keynes does not deal explicitly with the Great Depression in the *General Theory*, it is certain that this major work was written as a direct response to the cataclysmic events unfolding across the capitalist economies after 1929.

1.4 The Great Depression

The lessons from the history of economic thought teach us that one of the main driving forces behind the evolution of new ideas is the march of events. While theoretical ideas can help us understand historical events, it is also true that ‘the outcome of historical events often challenges theorists and overturns theories, leading to the evolution of new theories’ (Gordon, 2000a, p. 580). The Great Depression gave birth to modern macroeconomics as surely as accelerating inflation in the late 1960s and early 1970s facilitated the monetarist counter-revolution (see Johnson, 1971). It is also important to note that many of the most famous economists of the twentieth century, such as Milton Friedman, James Tobin and Paul Samuelson, were inspired to study economics in the first place as a direct result of their personal experiences during this period (see Parker, 2002).

While Laidler (1991, 1999) has reminded us that there is an extensive literature analysing the causes and consequences of economic fluctuations and monetary instability prior to the 1930s, the story of modern macroeconomics undoubtedly begins with the Great Depression. Before 1936, macroeconomics consisted of an ‘intellectual witch’s brew: many ingredients, some of them exotic, many insights, but also a great deal of confusion’ (Blanchard, 2000). For more than 70 years economists have attempted to provide a coherent explanation of how the world economy suffered such a catastrophe. Bernanke (1995) has even gone so far as to argue that ‘to understand the Great Depression is the Holy Grail of macroeconomics’.

Although Keynes was a staunch defender of the capitalist system against all known alternative forms of economic organization, he also believed that it had some outstanding and potentially fatal weaknesses. Not only did it give rise to an ‘arbitrary and inequitable distribution of income’; it also undoubtedly failed ‘to provide for full employment’ (Keynes, 1936, p. 372). During Keynes’s most productive era as an economist (1919–37) he was to witness at first hand the capitalist system’s greatest crisis of the twentieth century, the Great Depression. To Keynes, it was in the determination of the total volume of employment and GDP that capitalism was failing, not in its capacity to allocate resources efficiently. While Keynes did not believe that the capitalist market system was violently unstable, he observed that it ‘seems capable of remaining in a chronic condition of sub-normal activity for a considerable period without any marked tendency towards recovery or towards complete collapse’ (Keynes, 1936, p. 249). This is what others have interpreted as Keynes’s argument that involuntary unemployment can persist as an equilibrium phenomenon. From this perspective, Keynes concluded that capitalism needed to be purged of its defects and abuses if it was to survive the ideological onslaught it was undergoing during the

interwar period from the totalitarian alternatives on offer in both fascist Germany and communist Soviet Union.

Although a determination to oppose and overturn the terms of the Versailles peace settlement was an important factor in the growing influence of the Nazis throughout the 1920s, there seems little doubt that their final rise to power in Germany was also very closely linked to economic conditions. Had economic policy in the USA and Europe been different after 1929, 'one can well imagine that the horrors of Naziism and the Second World War might have been avoided' (Eichengreen and Temin, 2002). In Mundell's (2000) assessment, 'had the major central banks pursued policies of price stability instead of adhering to the gold standard, there would have been no great Depression, no Nazi revolution, and no World War II'.

During the 1930s the world entered a 'Dark Valley' and Europe became the world's 'Dark Continent' (Mazower, 1998; Brendon, 2000). The interwar period witnessed an era of intense political competition between the three rival ideologies of liberal democracy, fascism and communism. Following the Versailles Treaty (1919) democracy was established across Europe but during the 1930s was almost everywhere in retreat. By 1940 it was 'virtually extinct'. The failures of economic management in the capitalist world during the Great Depression allowed totalitarianism and extreme nationalism to flourish and the world economy began to disintegrate. As Brendon (2000) comments, 'if the lights went out in 1914, if the blinds came down in 1939, the lights were progressively dimmed after 1929'. The Great Depression was 'the economic equivalent of Armageddon' and the 'worst peacetime crisis to afflict humanity since the Black Death'. The crisis of capitalism discredited democracy and the old liberal order, leading many to conclude that 'if *laissez-faire* caused chaos, authoritarianism would impose order'. The interwar economic catastrophe helped to consolidate Mussolini's hold on power in Italy, gave Hitler the opportunity in January 1933 to gain political control in Germany, and plunged Japan into years of 'economic depression, political turmoil and military strife'. By 1939, after three years of civil war in Spain, Franco established yet another fascist dictatorship in Western Europe.

The famous Wall Street Crash of 1929 heralded one of the most dramatic and catastrophic periods in the economic history of the industrialized capitalist economies. In a single week from 23 to 29 October the Dow Jones Industrial Average fell 29.5 per cent, with 'vertical' price drops on 'Black Thursday' (24 October) and 'Black Tuesday' (29 October). Controversy exists over the causes of the stock market crash and its connection with the Great Depression in the economic activity which followed (see the interviews with Bernanke and Romer in Snowdon, 2002a). It is important to remember that during the 1920s the US economy, unlike many European economies, was enjoying growing prosperity during the 'roaring twenties' boom. Rostow's

(1960) ‘age of high mass consumption’ seemed to be at hand. The optimism visible in the stock market throughout the mid to late 1920s was reflected in a speech by Herbert Hoover to a Stanford University audience in November 1928. In accepting the Republican Presidential nomination he uttered these ‘famous last words’:

We in America today are nearer to the final triumph over poverty than ever before in the history of any land. The poorhouse is vanishing from among us. We have not yet reached the goal, but, given a chance to go forward with the policies of the last eight years, we shall soon with the help of God be in sight of the day when poverty will be banished from this nation. (See Heilbroner, 1989)

In the decade following Hoover’s speech the US economy (along with the other major industrial market economies) was to experience the worst economic crisis in its history, to such an extent that many began to wonder if capitalism and democracy could survive. In the US economy the cyclical peak of economic activity occurred in August 1929 and a decline in GDP had already begun when the stock market crash ended the 1920s bull market. Given that the crash came on top of an emerging recession, it was inevitable that a severe contraction of output would take place in the 1929–30 period. But this early part of the contraction was well within the range of previous business cycle experience. It was in the second phase of the contraction, generally agreed to be between early 1931 and March 1933, that the depression became ‘Great’ (Dornbusch et al., 2004). Therefore, the question which has captured the research interests of economists is: ‘How did the severe recession of 1929–30 turn into the Great Depression of 1931–33?’ The vast majority of economists now agree that the catastrophic collapse of output and employment after 1930 was in large part due to a series of policy errors made by the fiscal and monetary authorities in a number of industrial economies, especially the USA, where the reduction in economic activity was greater than elsewhere (see Bernanke, 2000, and Chapter 2).

The extent and magnitude of the depression can be appreciated by referring to the data contained in Table 1.1, which records the timing and extent of the collapse of industrial production for the major capitalist market economies between 1929 and 1933.

The most severe downturn was in the USA, which experienced a 46.8 per cent decline in industrial production and a 28 per cent decline in GDP. Despite rapid growth after 1933 (with the exception of 1938), output remained substantially below normal until about 1942. The behaviour of unemployment in the USA during this period is consistent with the movement of GDP. In the USA, unemployment, which was 3.2 per cent in 1929, rose to a peak of 25.2 per cent in 1933, averaged 18 per cent in the 1930s and never fell below 10 per cent until 1941 (Gordon, 2000a). The economy had

Table 1.1 *The Great Depression*

<i>Country</i>	<i>Depression began*</i>	<i>Recovery begins*</i>	<i>Industrial production** % decline</i>
USA	1929 (3)	1933 (2)	46.8
UK	1930 (1)	1931 (4)	16.2
Germany	1928 (1)	1932 (3)	41.8
France	1930 (2)	1932 (3)	31.3
Italy	1929 (3)	1933 (1)	33.0
Belgium	1929 (3)	1932 (4)	30.6
Netherlands	1929 (4)	1933 (2)	37.4
Denmark	1930 (4)	1933 (2)	16.5
Sweden	1930 (2)	1932 (3)	10.3
Czechoslovakia	1929 (4)	1932 (3)	40.4
Poland	1929 (1)	1933 (2)	46.6
Canada	1929 (2)	1933 (2)	42.4
Argentina	1929 (2)	1932 (1)	17.0
Brazil	1928 (3)	1931 (4)	7.0
Japan	1930 (1)	1932 (3)	8.5

Notes:

* Year; quarter in parentheses.

** Peak-to-trough decline.

Source: C. Romer (2004).

fallen so far below capacity (which continued to expand as the result of technological improvements, investment in human capital and rapid labour force growth) that, despite a 47 per cent increase in output between 1933 and 1937, unemployment failed to fall below 9 per cent and, following the impact of the 1938 recession, was still almost 10 per cent when the USA entered the Second World War in December 1941 (see Lee and Passell, 1979; C. Romer, 1992). Events in Europe were also disastrous and closely connected to US developments. The most severe recessions outside the USA were in Canada, Germany, France, Italy, the Netherlands, Belgium, Czechoslovakia and Poland, with the Scandinavian countries, the UK and Japan less severely affected. Accompanying the decline in economic activity was an alarming rise in unemployment and a collapse of commodity and wholesale prices (see Aldcroft, 1993).

How can we explain such a massive and catastrophic decline in aggregate economic activity? Before the 1930s the dominant view in what we now call

macroeconomics was the ‘old’ classical approach the origins of which go back more than two centuries. In 1776, Adam Smith’s celebrated *An Inquiry into the Nature and Causes of the Wealth of Nations* was published, in which he set forth the invisible-hand theorem. The main idea here is that the profit- and utility-maximizing behaviour of rational economic agents operating under competitive conditions will, via the ‘invisible-hand’ mechanism, translate the activities of millions of individuals into a social optimum. Following Smith, political economy had an underlying bias towards *laissez-faire*, and the classical vision of macroeconomics found its most famous expression in the dictum ‘supply creates its own demand’. This view, popularly known as Say’s Law, denies the possibility of general overproduction or underproduction. With the notable exception of Malthus, Marx and a few other heretics, this view dominated both classical and early neoclassical (post-1870) contributions to macroeconomic theory (see Baumol, 1999; Backhouse, 2002, and Chapter 2). While Friedman argues that during the Great Depression expansionary monetary policies were recommended by economists at Chicago, economists looking to the prevailing conventional wisdom contained in the work of the classical economists could not find a coherent plausible answer to the causes of such a deep and prolonged decline in economic activity (see Friedman interview at the end of Chapter 4 and Parker, 2002).

1.5 Keynes and the Birth of Macroeconomics

Although it is important to remember that economists before Keynes discussed what we now call macroeconomic issues such as business cycles, inflation, unemployment and growth, as we have already noted, the birth of modern macroeconomics as a coherent and systematic approach to aggregate economic phenomena can be traced back to the publication in February 1936 of Keynes’s book *The General Theory of Employment, Interest and Money*. In a letter written on 1 January 1935 to a friend, the writer George Bernard Shaw, Keynes speculated that ‘I believe myself to be writing a book on economic theory which will largely revolutionise – not, I suppose, at once but in the course of the next ten years – the way the world thinks about economic problems’. That Keynes’s bold prediction should be so accurately borne out is both a comment on his own self-confidence and a reflection of the inadequacy of classical economic analysis to provide an acceptable and convincing explanation of the prevailing economic situation in the early 1930s. Keynes recognized that the drastic economic situation confronting the capitalist system in the 1930s threatened its very survival and was symptomatic of a fundamental flaw in the operation of the price mechanism as a coordinating device.

To confront this problem Keynes needed to challenge the classical economists from within their citadel. The flaw, as he saw it, lay in the existing

classical theory whose teaching Keynes regarded as not only 'misleading' but 'disastrous' if applied to the real-world problems facing the capitalist economies during the interwar period. For Keynes, capitalism was not terminally ill but unstable. His objective was to modify the rules of the game within the capitalist system in order to preserve and strengthen it. He wanted full employment to be the norm rather than the exception and his would be a conservative revolution. As Galbraith (1977) has noted, Keynes never sought to change the world out of personal dissatisfaction: 'for him the world was excellent'. Although the republic of Keynes's political imagination lay on the 'extreme left of celestial space', he was no socialist. Despite the prompting of George Bernard Shaw, Keynes remained notoriously blind to Marx. In his opinion, *Das Kapital* contained nothing but 'dreary out of date academic controversialising' which added up to nothing more than complicated *hocus pocus*. At one of Keynes's Political Economy Club meetings he admitted to having read Marx in the same spirit as reading a detective story. He had hoped to find some clue to an idea but had never succeeded in doing so (see Skidelsky, 1992, pp. 514–23). But Keynes's contempt for Marxist analysis did not stop those on the right of the political spectrum from regarding his message as dangerously radical. For Keynes the ultimate political problem was how to combine economic efficiency, social justice and individual freedom. But questions of equity were always secondary to questions of efficiency, stability and growth. His solution to the economic malaise that was sweeping the capitalist economies in the early 1930s was to accept 'a large extension of the traditional functions of government'. But as Keynes (1926) argued in *The End of Laissez-Faire*, if the government is to be effective it should not concern itself with 'those activities which private individuals are already fulfilling' but attend to 'those functions which fall outside the private sphere of the individual, to those decisions which are made by no one if the state does not make them' (Keynes, 1972, Vol. IX, p. 291).

The most plausible explanation of the Great Depression is one involving a massive decline in aggregate demand. Both Patinkin (1982) and Tobin (1997) have argued forcefully that Keynes's major discovery in the *General Theory* was the 'Principle of Effective Demand' (see also Chapter 8). According to the classical macroeconomic system, a downward shift of aggregate (effective) demand will bring into play corrective forces involving falling prices so that the final impact of a reduction in aggregate demand will be a lower price level with real output and employment quickly returning to their full employment levels. In the classical world self-correcting market forces, operating via the price mechanism, restore equilibrium without the help of government intervention. While it could be argued that the US economy behaved in a way consistent with the classical model during the 1920s, it certainly did not in the decade after 1929. The classical model could not adequately account for

either the length or depth of the economic decline experienced by the major economies of the world. Indeed those economists belonging to the Mises–Hayek–Robbins–Schumpeter Austrian school of thought (see Chapter 9) believed that the depression should be allowed to run its course, since such an occurrence was the inevitable result of overinvestment during the artificially created boom. In their view the Great Depression was not a problem which policy makers should concern themselves with and intervention in the form of a stimulus to aggregate demand would only make things worse. The choice was between depression now or, if governments intervened inappropriately, even worse depression in the future.

The current consensus views the behaviour of economies during this period as consistent with an explanation which focuses on aggregate demand deficiency. However, this deficient aggregate demand explanation is one that a well-trained classical economist, brought up on Say's Law of markets and slogans of equilibrium, would find hard to either understand or accept. Indeed, explanations of the Great Depression that downplay the role of aggregate demand and instead emphasize the importance of supply-side factors have recently made a comeback (see Cole and Ohanian, 1999, 2002a). For those economists determined to find an explanation for the economic catastrophe which had befallen the economic systems of the Western world, the Great Depression had a depressing impact on their enthusiasm for *laissez-faire* capitalism.

1.6 The Rise and Fall of the Keynesian Consensus

The elimination of mass unemployment during the Second World War had a profound influence on the spread and influence of Keynesian ideas concerning the responsibility of government for maintaining full employment. In the UK, William Beveridge's *Full Employment in a Free Society* was published in 1944 and in the same year the government also committed itself to the maintenance of a 'high and stable level of employment' in a White Paper on *Employment Policy*. In the USA, the Employment Act of 1946 dedicated the Federal Government to the pursuit of 'maximum employment, production and purchasing power'. These commitments in both the UK and the USA were of great symbolic significance although they lacked specific discussion of how such objectives were to be attained. In the case of the UK, Keynes thought that the Beveridge target of an average level of unemployment of 3 per cent was far too optimistic although there was 'no harm in trying' (see Hutchison, 1977). Nevertheless the post-war prosperity enjoyed in the advanced economies was assumed to be in large part the direct result of Keynesian stabilization policies. In the words of Tobin who, until his death in 2002, was the USA's most prominent Keynesian economist:

A strong case has been made for the success of Keynesian policies. Virtually all advanced democratic capitalist societies adopted, in varying degrees, Keynesian strategies of demand management after World War Two. The period, certainly between 1950 and 1973, was one of unparalleled prosperity, growth, expansion of world trade, and stability. During this 'Golden Age' inflation and unemployment were low, the business cycle was tamed. (Tobin, 1987)

In a similar vein, Stewart (1986) has also argued that:

the common sense conclusion is that Britain and other Western countries had full employment for a quarter of a century after the war because their governments were committed to full employment, and knew how to secure it; and they knew how to secure it because Keynes had told them how.

It is also the case that before the 1980s it was conventional wisdom that real output had been more stable in the USA 'under conscious policies of built-in and discretionary stabilisation adopted since 1946 and particularly since 1961' compared to the period before the Second World War (Tobin, 1980a). This was one of the most widely held empirical generalizations about the US economy (Burns, 1959; Bailey, 1978). However, Christina Romer, in a series of very influential papers, challenged the conventional macroeconomic wisdom that for the US economy, the period after 1945 had been more stable than the pre-Great Depression period (see C. Romer, 1986a, 1986b, 1986c, 1989, 1994). Romer's thesis, expressed in her 1986 papers, is that the business cycle in the pre-Great Depression period was only slightly more severe than the instability experienced after 1945. In a close examination of data relating to unemployment, industrial production and GNP, Romer discovered that the methods used in the construction of the historical data led to systematic biases in the results. These biases exaggerated the pre-Great Depression data relating to cyclical movements. Thus the conventional assessment of the historical record of instability that paints a picture of substantial reductions in volatility is in reality a popular, but mistaken, view, based on a 'figment of the data'. By creating post-1945 data that are consistent with pre-1945 data Romer was able to show that both booms and recessions are more severe after 1945 than is shown in the conventional data. Romer also constructed new GNP data for the pre-1916 era and found that cyclical fluctuations are much less severe in the new data series than the original Kuznets estimates. Thus Romer concludes that there is in fact little evidence that the pre-1929 US economy was much more volatile than the post-1945 economy. Of course this same analysis also implies that the Great Depression was an event of 'unprecedented magnitude' well out of line with what went before as well as after. As Romer (1986b) writes, 'rather than being the worst of many, very severe pre-war depressions, the Great Depression stands out as the unprecedented collapse of a relatively stable pre-war economy'. In other words, the

Great Depression was not the norm for capitalism but a truly unique event. Although initially critical of Romer's findings, DeLong now accepts that Romer's critique is correct (DeLong and Summers, 1986; DeLong, 2001; see also the DeLong and Romer interviews in Snowden, 2002a).

In a recent paper Romer (1999) has surveyed the facts about short-run fluctuations relating to US data since the late nineteenth century. There she concludes that although the volatility of real macroeconomic indicators and average severity of recessions has declined only slightly between the pre-1916 and post-1945 periods, there is strong evidence that recessions have become less frequent and more uniform. The impact of stabilization policies has been to prolong post-1945 expansions and prevent severe economic downturns. However, there are also examples of policy-induced booms (for example 1962–9 and 1970–73) and recessions (for example 1980–82) since 1945 and this is what 'explains why the economy has remained volatile in the post-war era'.

Even if we accept the conventional view that the post-war economy has been much more stable than the pre-1914 era, not everyone would agree that there was a Keynesian revolution in economic policy (the opposing views are well represented in Stein, 1969; Robinson, 1972; Tomlinson, 1984; Booth, 1985; Salant, 1988; Laidler, 1999). Some authors have also questioned whether it was the traditional Keynesian emphasis on fiscal policy that made the difference to economic performance in the period after 1945 (Matthews, 1968). What is not in doubt is that from the end of the Second World War until 1973 the industrial market economies enjoyed a 'Golden Age' of unparalleled prosperity. Maddison (1979, 1980) has identified several special characteristics which contributed to this period of exceptional economic performance:

1. increased liberalization of international trade and transactions;
2. favourable circumstances and policies which contributed to producing low inflation in conditions of very buoyant aggregate demand;
3. active government promotion of buoyant domestic demand;
4. a backlog of growth possibilities following the end of the Second World War.

As Table 1.2 indicates, growth of per capita GDP in Western Europe, which averaged 4.08 per cent during the period 1950–73, was unprecedented. Although Crafts and Toniolo (1996) view the 'Golden Age' as a 'distinctly European phenomenon', it should be noted that the growth miracle also extended to the centrally planned economies: Latin America, Asia and Africa. During this same period growth of per capita GDP in Japan was nothing less than exceptional, averaging 8.05 per cent. Table 1.3 presents data on growth

Table 1.2 Growth of per capita GDP, world and major regions, 1820–1998 (annual average compound growth rates)

<i>Region</i>	<i>1820–70</i>	<i>1870–1913</i>	<i>1913–50</i>	<i>1950–73</i>	<i>1973–98</i>
Western Europe	0.95	1.32	0.76	4.08	1.78
Western offshoots*	1.42	1.81	1.55	2.44	1.94
Japan	0.19	1.48	0.89	8.05	2.34
Asia (excluding Japan)	–0.11	0.38	–0.02	2.92	3.54
Latin America	0.10	1.81	1.42	2.52	0.99
Eastern Europe and former USSR	0.64	1.15	1.50	3.49	–1.10
Africa	0.12	0.64	1.02	2.07	0.01
World	0.53	1.30	0.91	2.93	1.33

Source: Maddison (2001), Table 3-1a.

Table 1.3 Growth rates (GDP), 1820–1998

<i>Country</i>	<i>1820–70</i>	<i>1870–1913</i>	<i>1913–50</i>	<i>1950–73</i>	<i>1973–98</i>
France	1.27	1.63	1.15	5.05	2.10
Germany	2.01	2.83	0.30	5.68	1.76
Italy	1.24	1.94	1.49	5.64	2.28
UK	2.05	1.90	1.19	2.93	2.00
USA	4.20	3.94	2.84	3.93	2.99
Canada	4.44	4.02	2.94	4.98	2.80
Japan	0.41	2.44	2.21	9.29	2.97

Source: Adapted from Maddison (2001).

rates of GDP for the G7 for the same five sub-periods over the period 1820–1998. The table further demonstrates the historically high growth performance achieved during the period 1950–73, especially in France, Germany, Italy and Japan (see Chapter 11).

Whatever the causes, this ‘Golden Age’ came to an end after 1973 and the economic problems of the 1970s brought the Keynesian bandwagon to an abrupt (but temporary) halt. The acceleration of inflation, rising unemployment and a slowdown in economic growth (see Tables 1.3–1.5) during the 1970s were attributed, by Keynesian critics, to the misguided expansionary policies carried out in the name of Keynes. Taking the 1960–2002 period as a

Table 1.4 Unemployment rates, 1964–2002

	USA	Canada	Japan	France	Germany	Italy	UK
1964	5.0	4.3	1.1	1.4	0.4	4.3	2.6
1965	4.4	3.6	1.2	1.5	0.3	5.3	2.3
1966	3.6	3.3	1.3	1.8	0.2	5.7	2.2
1967	3.7	3.8	1.3	1.9	1.3	5.3	3.3
1968	3.5	4.4	1.2	2.7	1.5	5.6	3.1
1969	3.4	4.4	1.1	2.3	0.9	5.6	2.9
1970	4.8	5.6	1.1	2.5	0.8	5.3	3.0
1971	5.8	6.1	1.2	2.7	0.9	5.3	3.6
1972	5.5	6.2	1.4	2.8	0.8	6.3	4.0
1973	4.8	5.5	1.3	2.7	0.8	6.2	3.0
1974	5.5	5.3	1.4	2.8	1.6	5.3	2.9
1975	8.3	6.9	1.9	4.0	3.6	5.8	4.3
1976	7.6	7.1	2.0	4.4	3.7	6.6	5.6
1977	6.9	8.1	2.0	4.9	3.6	7.0	6.0
1978	6.1	8.4	2.2	4.7	3.0	5.3	5.7
1979	5.8	7.5	2.1	5.3	2.7	5.8	4.7
1980	7.2	7.5	2.0	5.8	2.6	5.6	6.2
1981	7.6	7.6	2.2	7.0	4.0	6.2	9.7
1982	9.7	11.0	2.4	7.7	5.7	6.8	11.1
1983	9.6	11.9	2.7	8.1	6.9	7.7	11.1
1984	7.5	11.3	2.7	9.4	7.1	7.9	10.9
1985	7.2	10.7	2.6	9.8	7.2	8.1	11.2
1986	7.0	9.6	2.8	9.9	6.5	8.9	11.2
1987	6.2	8.8	2.8	10.1	6.3	9.6	10.3
1988	5.5	7.8	2.5	9.6	6.2	9.7	8.5
1989	5.3	7.5	2.3	9.1	5.6	9.7	7.1
1990	5.6	8.1	2.1	8.6	4.8	8.9	6.9
1991	6.8	10.3	2.1	9.1	4.2	8.5	8.6
1992	7.5	11.2	2.2	10.0	6.4	8.7	9.7
1993	6.9	11.4	2.5	11.3	7.7	10.1	9.9
1994	6.1	10.4	2.9	11.8	8.2	11.0	9.2
1995	5.6	9.4	3.1	11.4	8.0	11.5	8.5
1996	5.4	9.6	3.4	11.9	8.7	11.5	8.0
1997	4.9	9.1	3.4	11.8	9.7	11.6	6.9
1998	4.5	8.3	4.1	11.4	9.1	11.7	6.2
1999	4.2	7.6	4.7	10.7	8.4	11.3	5.9
2000	4.0	6.8	4.7	9.3	7.8	10.4	5.4
2001	4.7	7.2	5.0	8.5	7.8	9.4	5.0
2002	5.8	7.7	5.4	8.7	8.2	9.0	5.1

Notes: Standardized unemployment rates (percentage of total labour force up to 1977, thereafter percentage of civilian labour force).

Source: OECD, *Economic Outlook*, various issues.

Table 1.5 Inflation rates, 1964–2002

	USA	Canada	Japan	France	Germany	Italy	UK
1964	1.3	1.8	3.8	3.2	2.4	5.9	3.2
1965	1.6	2.5	6.6	2.7	3.2	4.5	4.8
1966	3.0	3.7	5.1	2.6	3.6	2.2	3.9
1967	2.8	3.6	4.0	2.8	1.6	1.6	2.4
1968	4.2	4.1	5.4	4.6	1.6	1.5	4.7
1969	5.4	4.5	5.2	6.0	1.9	2.4	5.5
1970	5.9	3.4	7.7	5.9	3.4	5.0	6.4
1971	4.3	2.8	6.4	5.4	5.2	4.9	9.4
1972	3.3	4.8	4.8	6.1	5.5	5.8	7.1
1973	6.2	7.6	11.6	7.4	7.0	10.8	9.2
1974	11.0	10.8	23.2	13.6	7.0	19.0	15.9
1975	9.2	10.8	11.9	11.8	5.9	17.2	24.1
1976	5.8	7.6	9.4	9.6	4.3	16.7	16.7
1977	6.5	8.0	8.2	9.5	3.7	18.5	15.9
1978	7.6	8.9	4.2	9.3	2.7	12.1	8.2
1979	11.2	9.1	3.7	10.6	4.1	14.8	13.4
1980	13.5	10.2	7.8	13.5	5.4	21.2	18.1
1981	10.4	12.5	4.9	13.3	6.3	19.6	11.9
1982	6.2	10.8	2.7	12.1	5.3	16.5	8.7
1983	3.2	5.9	1.9	9.5	3.3	14.7	4.6
1984	4.3	4.4	2.3	7.7	2.4	10.8	5.0
1985	3.6	4.0	2.0	5.8	2.2	9.2	6.1
1986	1.9	4.2	0.6	2.6	−0.1	5.8	3.4
1987	3.7	4.4	0.1	3.3	0.2	4.7	4.2
1988	4.1	4.0	0.7	2.7	1.3	5.1	4.9
1989	4.8	5.0	2.3	3.5	2.8	6.3	7.8
1990	5.4	4.8	3.1	3.4	2.7	6.4	9.5
1991	4.3	5.6	3.2	3.2	3.5	6.3	5.9
1992	3.0	1.5	1.7	2.4	1.7	5.2	3.7
1993	3.0	1.8	1.3	2.1	5.1	4.5	1.6
1994	2.6	0.2	0.7	1.7	4.4	4.1	2.5
1995	2.8	2.2	−0.1	1.8	2.8	5.2	3.4
1996	2.9	1.6	0.1	2.0	1.7	4.0	2.5
1997	2.3	1.6	1.7	1.2	1.4	2.0	3.1
1998	1.6	1.0	0.7	0.7	1.9	2.0	3.4
1999	2.2	1.7	−0.3	0.5	0.9	1.7	1.6
2000	3.4	2.8	−0.7	1.7	0.6	2.5	2.9
2001	2.8	2.5	−0.7	1.6	2.0	2.8	1.8
2002	1.6	2.3	−0.9	1.9	1.3	2.5	1.6

Notes: Percentage change over previous year of consumer prices (calculated from indexes).

Source: International Monetary Fund, *International Financial Statistics*, various issues.

whole, on average in the 'Golden Age' both unemployment and inflation were low. In the period 1983–93, inflation came down but unemployment remained stubbornly high in many countries, especially in Western Europe where high unemployment has been attributed by some economists to hysteresis effects and/or various labour market rigidities (see Chapter 7). In the most recent period, 1994–2002, inflation was low but unemployment remained high in Western Europe while it declined in the USA. But only in the period 1973–83 do we see the simultaneous combination of high unemployment and high inflation, i.e. stagflation. To the critics of Keynesianism stagflation was an inevitable legacy of the 'Golden Age' of demand management (Friedman, 1975; Bruno and Sachs, 1985; DeLong, 1997; see also Cairncross and Cairncross, 1992, for a discussion of the legacy of the 1960s).

1.7 Theoretical Schizophrenia and the Neoclassical Synthesis

We can only speculate on what Keynes would have made of the Keynesian policies carried out in his name. What we can see more clearly, with the benefit of hindsight and experience, is that at the theoretical level Keynesian economics created schizophrenia in the way that economics was taught, with courses in microeconomics typically concentrating on issues relating to allocation, production and distribution (questions of efficiency and equity) and courses in macroeconomics focusing on problems associated with the level and the long-term trend of aggregate output and employment, and the rate of inflation (questions of growth and stability). The Keynesian propositions of market failure and involuntary unemployment expounded within macroeconomics did not rest easily alongside the Walrasian theory of general competitive equilibrium, where the actions of rational optimizing individuals ensure that all markets, including the labour market, are cleared by flexible prices. In the Walrasian model, which dominated microeconomics, lapses from full employment cannot occur. Although Paul Samuelson and others attempted to reconcile these two strands of economics, producing a 'neoclassical synthesis', Keynesian macroeconomics and orthodox neoclassical microeconomics integrated about as well as oil and water. During the 'Golden Age' this problem could be ignored. By 1973, with accelerating inflation, it could not. As Greenwald and Stiglitz (1987) have argued, from this point there were two ways in which the two sub-disciplines could be reconciled. Either macro theory could be adapted to orthodox neoclassical micro theory (the new classical approach) or micro theory could be adapted to macro theory (the new Keynesian approach). As we shall see, these attempts at reconciliation have been a dominating influence on macroeconomic theorizing during the past three decades.

Keynes himself had contributed to this dichotomy because he saw 'no reason to suppose that the existing system seriously misemploys the factors

of production which are in use ... It is in determining the volume, not the direction, of actual employment that the existing system has broken down' (Keynes, 1936, p. 379). In other words, the apparent inability of the capitalist system to provide for full employment was the main blemish on an economic system which Keynes otherwise held in high regard. Once this major defect was remedied and full employment restored, 'the classical theory comes into its own again from this point onwards' and there 'is no objection to be raised against classical analysis of the manner in which private self-interest will determine what in particular is produced, in what proportions the factors of production will be combined to produce it, and how the value of the final product will be distributed between them' (Keynes, 1936, pp. 378–9). Thus Keynes can be viewed as attempting to reconcile two opposing views of a capitalist market economy. First, we have the classical–neoclassical view which extols the efficiency of the price mechanism in solving the fundamental allocation and production problems which arise from the scarcity of resources. Second, we have Keynes's iconoclastic vision which highlights the shortcomings of the invisible hand, at least with respect to the general level of output and employment. Keynes was optimistic that this later problem could be solved with limited government intervention, and capitalism could be saved from itself.

The synthesis of the ideas of the classical economists with those of Keynes dominated mainstream economics at least until the early 1970s. The standard textbook approach to macroeconomics from the period following the Second World War until the early 1970s relied heavily on the interpretation of the *General Theory* provided by Hicks (1937) and modified by the contributions of Modigliani (1944), Patinkin (1956) and Tobin (1958). Samuelson's best-selling textbook popularized the synthesis of Keynesian and classical ideas, making them accessible to a wide readership and successive generations of students. It was Samuelson who introduced the label 'neoclassical synthesis' into the literature in the third edition of *Economics*, in 1955. This synthesis of classical and Keynesian ideas became the standard approach to macroeconomic analysis, both in textbooks and in professional discussion (see Chapter 3). The orthodox Keynesian model provided the foundation for the large-scale macroeconometric models developed by Lawrence Klein and also those associated with the Cowles Commission. Such models were used for forecasting purposes and to enable economists to assess the likely impact on the economy of alternative economic policies. Lucas and Sargent (1978) have attributed the 'dominant scientific position' that orthodox Keynesian economics attained by 1960 to the fact that it 'lent itself so readily to the formulation of explicit econometric models'. As far as macroeconomics was concerned, for the majority of researchers in the 1960s, the 'Keynesian model was the only game in town' (Barro, 1989a).

The orthodox Keynesian argument that government intervention, in the form of activist monetary and fiscal policies, could correct the aggregate instability exhibited by market economies also influenced political decision makers. At least up until the mid-1970s both Labour and Conservative parties in the UK adhered to orthodox Keynesian principles. In the USA it was not until the early 1960s that the Keynesian approach (known as the 'New Economics') was adopted with any real enthusiasm (Tobin, 1987; Perry and Tobin, 2000). The Council of Economic Advisers (CEA) appointed by President Kennedy was dominated by Keynesian economists. Chaired by Walter Heller, the CEA also included James Tobin and Robert Solow while Paul Samuelson served as an unofficial adviser (see Snowdon and Vane, 2002a). In 1971 even President Nixon had declared that 'we are all Keynesians now!' However, by the 1980s, US economic policy was very different from that prevailing during the Kennedy–Johnson era (see Feldstein, 1992).

Before the 1970s the Keynesian approach gave emphasis to demand-side factors. Keynes had reversed Say's Law, and Keynesianism, based on the IS–LM interpretation of Keynes, was the established orthodoxy in macroeconomics (see Chapter 3 and Patinkin, 1990a, for a discussion of the IS–LM interpretation of Keynes). Initially Keynesianism was associated with fiscalism but by the late 1960s the importance of monetary factors was widely recognized by Keynesians (see Tobin, 1987, 1996; Buiter, 2003a). The most important Keynesian development during this period was the incorporation of the Phillips curve into the prevailing macroeconomic model (see Phillips, 1958; Lipsey, 1978; Chapter 3). By the early 1960s the IS–LM model was being used to explain the determination of output and employment, while the Phillips curve enabled the policy maker to predict the rate of inflation which would result from different target levels of unemployment. The simultaneous increase in both unemployment and inflation (shown in Tables 1.4 and 1.5) in the major industrial economies in the early 1970s proved fatal to the more simplistic versions of 'hydraulic' Keynesianism and prepared the way for the monetarist and new classical counter-revolutions (see Johnson, 1971; Bleaney, 1985; Colander, 1988). The 1970s witnessed a significant renaissance of the pre-Keynesian belief that the market economy is capable of achieving macroeconomic stability and rapid growth providing the visible (and palsied) hand of government is prevented from conducting activist discretionary fiscal and monetary policies. The stagflation of the 1970s gave increasing credibility and influence to those economists who had for many years warned that Keynesian macroeconomic policies were both over-ambitious and, more importantly, predicated on theories that were fundamentally flawed (see Friedman, 1968a; Hayek, 1978; Buchanan et al., 1978; Lucas and Sargent, 1978; Romer and Romer, 1997).

The demise of the neoclassical synthesis mainstream position signalled the beginning of a period when the dominance of Keynesian macroeconomics

came to an end and, as we have seen, the breakdown of this consensus position was due to both empirical and theoretical flaws (see Mankiw, 1990). For the more extreme critics of Keynesianism the task facing the new generation of macroeconomic theorists was to 'sort through the wreckage determining which features of that remarkable intellectual event called the Keynesian revolution can be salvaged and put to good use and which others must be discarded' (Lucas and Sargent, 1978).

1.8 Schools of Thought in Macroeconomics After Keynes

According to Johnson (1971), 'by far the most helpful circumstance for the rapid propagation of a new revolutionary theory is the existence of an established orthodoxy which is clearly inconsistent with the most salient facts of reality'. As we have seen, the inability of the classical model to account adequately for the collapse of output and employment in the 1930s paved the way for the Keynesian revolution. During the 1950s and 1960s the neoclassical synthesis became the accepted wisdom for the majority of economists (see Chapter 3). The work of Nobel Memorial Laureates James Tobin, Lawrence Klein, Robert Solow, Franco Modigliani, James Meade, John Hicks and Paul Samuelson dominated the Keynesian school and provided intellectual support for the view that government intervention in the form of demand management can significantly improve the performance of the economy. The 'New Economics' adopted by the Kennedy administration in 1961 demonstrated the influence of Keynesian thinking and the 1962 *Economic Report of the President* explicitly advocated stabilization policies with the objective of keeping 'overall demand in step with the basic production potential of the economy'.

During the 1970s this Keynesian approach increasingly came under attack and was subjected to the force of two 'counter-revolutionary' approaches, namely monetarism and new classical macroeconomics. Both of these approaches are underpinned by the belief that there is no need for activist stabilization policy. The new classical school in particular supports the view that the authorities cannot, and therefore should not, attempt to stabilize fluctuations in output and employment through the use of activist demand management policies (Lucas, 1981a).

As we shall discuss in Chapter 4, in the orthodox monetarist view there is no need for activist stabilization policy (except in extreme circumstances) given the belief that capitalist economies are inherently stable, unless disturbed by erratic monetary growth. Monetarists hold that when subjected to some disturbance the economy will return, fairly quickly, to the neighbourhood of the 'natural' level of output and employment. Given this view they question the need for stabilization policy involving the 'fine-tuning' of aggre-

gate demand. Even if there were a need, monetarists argue that the authorities can't stabilize fluctuations in output and employment due to the problems associated with stabilization policy. These problems include those posed by the length of the inside lag associated with fiscal policy, the long and variable outside time lags associated with monetary policy and uncertainty over what precise value to attribute to the natural rate of unemployment. In consequence monetarists argue that the authorities shouldn't be given discretion to vary the strength of fiscal and monetary policy as and when they see fit, fearing that they could do more harm than good. Instead, monetarists advocate that the monetary authorities should be bound by rules.

With hindsight two publications were particularly influential in cementing the foundations for the monetarist counter-revolution. First there is Friedman and Schwartz's (1963) monumental study, *A Monetary History of the United States, 1867–1960*. This influential volume presents persuasive evidence in support of the monetarist view that changes in the money supply play a largely independent role in cyclical fluctuations. Second is Friedman's (1968a) *American Economic Review* article on 'The Role of Monetary Policy' in which he put forward the natural rate hypothesis and the view that there is no long-run trade-off between inflation and unemployment. The influence of Friedman's article was greatly enhanced because it anticipated the events of the 1970s and, in particular, predicted accelerating inflation as a consequence of the repeated use of expansionary monetary policy geared to over-optimistic employment targets.

During the 1970s a second counter-revolution took place associated with new classical macroeconomics. This approach, which cast further doubt on whether traditional Keynesian aggregate demand management policies can be used to stabilize the economy, is often seen as synonymous with the work of one of Friedman's former University of Chicago students, the 1995 Nobel Memorial Laureate, Robert E. Lucas Jr. Other leading advocates of the new classical monetary approach to analysing economic fluctuations during the 1970s include Thomas Sargent, Neil Wallace, Robert Barro, Edward Prescott and Patrick Minford (see Hoover, 1988; Snowdon et al., 1994).

As we will discuss in Chapter 5, by combining the rational expectations hypothesis (first put forward by John Muth in the context of microeconomics in the early 1960s), the assumption that markets continuously clear, and Friedman's natural rate hypothesis, Lucas was able to demonstrate in his 1972 *Journal of Economic Theory* paper on 'Expectations and the Neutrality of Money' how a short-run equilibrium relationship between inflation and unemployment (Phillips curve) will result if inflation is unanticipated due to incomplete information.

In line with the monetarist school, new classical economists believe that the economy is inherently stable, unless disturbed by erratic monetary growth,

and that when subjected to some disturbance will quickly return to its natural level of output and employment. However, in the new classical approach it is unanticipated monetary shocks that are the dominant cause of business cycles. The new classical case against discretionary policy activism, and in favour of rules, is based on a different set of arguments to those advanced by monetarists. Three insights in particular underlie the new classical approach. First, the policy ineffectiveness proposition (Sargent and Wallace, 1975, 1976) implies that only random or arbitrary monetary policy actions undertaken by the authorities can have short-run real effects because they cannot be anticipated by rational economic agents. Given that such actions will only increase the variation of output and employment around their natural levels, increasing uncertainty in the economy, the proposition provides an argument against discretionary policy activism in favour of rules (see Chapter 5, section 5.5.1). Second, Lucas's (1976) critique of economic policy evaluation undermines confidence that traditional Keynesian-style macroeconomic models can be used to accurately predict the consequences of various policy changes on key macroeconomic variables (see Chapter 5, section 5.5.6). Third, Kydland and Prescott's (1977) analysis of dynamic time inconsistency, which implies that economic performance can be improved if discretionary powers are taken away from the authorities, provides another argument in the case for monetary policy being conducted by rules rather than discretion (see Chapter 5, section 5.5.3).

Following the demise of the monetary-surprise version of new classical macroeconomics in the early 1980s a second phase of equilibrium theorizing was initiated by the seminal contribution of Kydland and Prescott (1982) which, following Long and Plosser (1983), has come to be referred to as real business cycle theory. As we shall discuss in Chapter 6, modern equilibrium business cycle theory starts with the view that 'growth and fluctuations are not distinct phenomena to be studied with separate data and analytical tools' (Cooley and Prescott, 1995). Proponents of this approach view economic fluctuations as being predominantly caused by persistent real (supply-side) shocks, rather than unanticipated monetary (demand-side) shocks, to the economy. The focus of these real shocks involves large random fluctuations in the rate of technological progress that result in fluctuations in relative prices to which rational economic agents optimally respond by altering their supply of labour and consumption. Perhaps the most controversial feature of this approach is the claim that fluctuations in output and employment are Pareto-efficient responses to real technology shocks to the aggregate production function. This implies that observed fluctuations in output are viewed as fluctuations in the natural rate of output, not deviations of output from a smooth deterministic trend. As such the government should not attempt to reduce these fluctuations through stabilization policy, not only because such

attempts are unlikely to achieve their desired objective but also because reducing instability would reduce welfare (Prescott, 1986).

The real business cycle approach conflicts with both the conventional Keynesian analysis as well as monetarist and new classical monetary equilibrium theorizing where equilibrium is identified with a stable trend for the natural (full employment) growth path. In the Keynesian approach departures from full employment are viewed as disequilibrium situations where societal welfare is below potential and government has a role to correct this macroeconomic market failure using fiscal and monetary policy. In sharp contrast the 'bold conjecture' of real business cycle theorists is that each stage of the business cycle, boom and slump, is an equilibrium. 'Slumps represent an undesired, undesirable, and unavoidable shift in the constraints that people face; but, given these constraints, markets react efficiently and people succeed in achieving the best outcomes that circumstances permit ... every stage of the business cycle is a Pareto efficient equilibrium' (Hartley et al., 1998). Needless to say, the real business cycle approach has proved to be highly controversial and has been subjected to a number of criticisms, not least the problem of identifying negative technological shocks that cause recessions. In Chapter 6 we shall examine these criticisms and appraise the contribution that real business cycle theorists have made to modern macroeconomics.

The new classical equilibrium approach to explaining economic fluctuations has in turn been challenged by a revitalized group of new Keynesian theorists who prefer to adapt micro to macro theory rather than accept the new classical approach of adapting macro theory to orthodox neoclassical market-clearing microfoundations. Important figures here include George Akerlof, Janet Yellen, Olivier Blanchard, Gregory Mankiw, Edmund Phelps, David Romer, Joseph Stiglitz and Ben Bernanke (see Gordon, 1989; Mankiw and Romer, 1991). As we will discuss in Chapter 7, new Keynesian models have incorporated the rational expectations hypothesis, the assumption that markets may fail to clear, due to wage and price stickiness, and Friedman's natural rate hypothesis. According to proponents of new Keynesian economics there is a need for stabilization policy as capitalist economies are subjected to both demand- and supply-side shocks which cause inefficient fluctuations in output and employment. Not only will capitalist economies fail to rapidly self-equilibrate, but where the actual rate of unemployment remains above the natural rate for a prolonged period, the natural rate (or what new Keynesians prefer to refer to as NAIRU – non-accelerating inflation rate of unemployment) may well increase due to 'hysteresis' effects. As governments can improve macroeconomic performance, if they are given discretion to do so, we also explore in Chapter 7 the new Keynesian approach to monetary policy as set out by Clarida et al. (1999) and Bernanke et al. (1999).

Finally we can identify two further groups or schools of thought. The Post Keynesian school is descended from some of Keynes's more radical contemporaries and disciples, deriving its inspiration and distinctive approach from the writings of Joan Robinson, Nicholas Kaldor, Michal Kalecki, George Shackle and Piero Sraffa. Modern advocates of this approach include Jan Kregel, Victoria Chick, Hyman Minsky and Paul Davidson, the author of Chapter 8 which discusses the Post Keynesian school. There is also a school of thought that has its intellectual roots in the work of Ludwig von Mises and Nobel Memorial Laureate Friedrich von Hayek which has inspired a distinctly Austrian approach to economic analysis and in particular to the explanation of business cycle phenomena. Modern advocates of the Austrian approach include Israel Kirzner, Karen Vaughn and Roger Garrison, the author of Chapter 9 which discusses the Austrian school.

To recap, we identify the following schools of thought that have made a significant contribution to the evolution of twentieth-century macroeconomics: (i) the orthodox Keynesian school (Chapter 3), (ii) the orthodox monetarist school (Chapter 4), (iii) the new classical school (Chapter 5), (iv) the real business cycle school (Chapter 6), (v) the new Keynesian school (Chapter 7), (vi) the Post Keynesian school (Chapter 8) and (vii) the Austrian school (Chapter 9). No doubt other economists would choose a different classification, and some have done so (see Cross, 1982a; Phelps, 1990). For example, Gerrard (1996) argues that a unifying theme in the evolution of modern macroeconomics has been an 'ever-evolving classical Keynesian debate' involving contributions from various schools of thought that can be differentiated and classified as orthodox, new or radical. The two 'orthodox' schools, 'IS-LM Keynesianism' and 'neoclassical monetarism', dominated macroeconomic theory in the period up to the mid-1970s. Since then three new schools have been highly influential. The new classical, real business cycle and new Keynesian schools place emphasis on issues relating to aggregate supply in contrast to the orthodox schools which focused their research primarily on the factors determining aggregate demand and the consequences of demand-management policies. In particular, the new schools share Lucas's view that macroeconomic models should be based on solid microeconomic foundations (Hoover, 1988, 1992). The 'radical' schools, both Post Keynesian and Austrian, are critical of mainstream analysis, whether it be orthodox or new.

We are acutely aware of the dangers of categorizing particular economists in ways which are bound to oversimplify the sophistication and breadth of their own views. Many economists dislike being labelled or linked to any specific research programme or school, including some of those economists listed above. As Hoover (1988) has observed in a similar enterprise, 'Any economist is described most fully by a vector of characteristics' and any definition will 'emphasise some elements of this vector, while playing down

related ones'. It is also the case that during the last decade of the twentieth century, macroeconomics began to evolve into what Goodfriend and King (1997) have called a 'New Neoclassical Synthesis'. The central elements of this new synthesis involve both new classical and new Keynesian elements, namely:

1. the need for macroeconomic models to take into account intertemporal optimization;
2. the widespread use of the rational expectations hypothesis;
3. recognition of the importance of imperfect competition in goods, labour and credit markets;
4. incorporating costly price adjustment into macroeconomic models.

Therefore, one important development arising from the vociferous debates of the 1970s and 1980s is that there is now more of a consensus on what constitutes a 'core of practical macroeconomics' than was the case 25 years ago (see Blanchard, 1997b, 2000; Blinder, 1997a; Eichenbaum, 1997; Solow, 1997; Taylor, 1997b).

With these caveats in mind we will examine in Chapters 3–9 the competing schools of macroeconomic thought identified above. We also include interviews with some of the economists who are generally recognized as being leading representatives of each group and/or prominent in the development of macroeconomic analysis in the post-war period. In discussing these various schools of thought it is important to remember that the work of Keynes remains the 'main single point of reference, either positive or negative, for all the schools of macroeconomics'. Therefore, it is hardly surprising that all the schools define themselves in relation to the ideas originally put forward by Keynes in his *General Theory*, 'either as a development of some version of his thought or as a restoration of some version of pre-Keynesian classical thought' (Vercelli, 1991, p. 3).

Before considering the central tenets and policy implications of these main schools of thought we also need to highlight two other important changes that have taken place in macroeconomics during the final decades of the twentieth century. First, in section 1.9 we outline the development of what has come to be known as the new political macroeconomics. The second key change of emphasis during the last 20 years, reviewed in section 1.10, has been the renaissance of growth theory and empirics.

1.9 The New Political Macroeconomics

During the past two decades research into the various forms of interaction between politics and macroeconomics has become a major growth area giving rise to a field known as the 'new political macroeconomics' (Alesina,

1995; Alt and Alesina, 1996; Alesina and Rosenthal, 1995; Alesina et al. 1997; Drazen, 2000a). This research area has developed at the interface of macroeconomics, social choice theory and game theory. Of particular interest to macroeconomists is the influence that political factors have on such issues as business cycles, inflation, unemployment, growth, budget deficits and the conduct and implementation of stabilization policies (Snowdon and Vane, 1999a).

As we will discuss in Chapter 10, modern politico-economic models, initially developed in the 1970s by Nordhaus (1975), Hibbs (1977) and Frey and Schneider (1978a), view the government as an endogenous component of the political and economic system. The conventional normative approach, in sharp contrast, regards the policy maker as a 'benevolent social planner' whose only objective is to maximize social welfare. The normative approach is concerned with how policy makers should act rather than how they do act.

Alesina (1994) has highlighted two general political forces that are always likely to play a crucial distorting role in the economy. The first factor is the incumbent policy maker's desire to retain power, which acts as an incentive to 'opportunistic' behaviour. Second, society is polarized and this inevitably gives rise to some degree of social conflict. As a result ideological considerations will manifest themselves in the form of 'partisan' behaviour and actions.

Nordhaus's model predicts self-interested opportunistic behaviour, irrespective of party allegiance, before an election. When these political motivations are mixed with myopic non-rational behaviour of voters and non-rational expectations of economic agents, a political business cycle is generated which ultimately leads to a higher rate of inflation in a democracy than is optimal. In the Hibbs model 'left'-inclined politicians have a greater aversion to unemployment than inflation, and 'right'-inclined politicians have the opposite preference. The Hibbs model therefore predicts a systematic difference in policy choices and outcomes in line with the partisan preferences of the incumbent politicians.

Both of these models were undermined by the rational expectations revolution. By the mid-1970s models which continued to use adaptive expectations or were reliant on a long-run stable Phillips curve trade-off were coming in for heavy criticism. The scope for opportunistic or ideological behaviour seemed to be extremely limited in a world dominated by rational 'forward-looking' voters and economic agents who could not be systematically fooled. However, after a period of relative neglect a second phase of politico-economic models emerged in the mid-1980s. These models capture the insights emanating from and including the rational expectations hypothesis in macroeconomic models. Economists such as Rogoff and Sibert (1988) have developed 'rational opportunistic' models, and Alesina has been prominent in developing the 'rational partisan' theory of aggregate instability (Alesina, 1987, 1988; Alesina and

Sachs, 1988). These models show that while the scope for opportunistic or ideological behaviour is more limited in a rational expectations setting, the impact of political distortions on macroeconomic policy making is still present given the presence of imperfect information and uncertainty over the outcome of elections (Alesina and Roubini, 1992). As such this work points towards the need for greater transparency in the conduct of fiscal policy and the introduction of central bank independence for the conduct of monetary policy (Alesina and Summers, 1993; Alesina and Gatti, 1995; Alesina and Perotti 1996a; Snowdon, 1997).

More recently several economists have extended the reach of the new political macroeconomics and this has involved research into the origin and persistence of rising fiscal deficits and debt ratios, the political economy of growth, the optimal size of nations, the economic and political risk involved with membership of fiscal unions and the political constraints on economic growth (Alesina and Perotti, 1996b, 1997a; Alesina et al., 1996; Alesina and Spolare, 1997, 2003; Alesina and Perotti, 1998; Acemoglu and Robinson, 2000a, 2003). With respect to achieving a reduction in the fiscal deficit/GDP ratio, Alesina's research has indicated that successful fiscal adjustment is highly correlated with the composition of spending cuts. Unsuccessful adjustments are associated with cuts in public investment expenditures whereas in successful cases more than half the expenditure cuts are in government wages and transfer payments (Alesina et al., 1997). In addition, because fiscal policy is increasingly about redistribution in the OECD countries, increases in labour taxation to finance an increase in transfers are likely to induce wage pressure, raise labour costs and reduce competitiveness (Alesina and Perotti, 1997b). Research into the optimal size of nations has indicated an important link between trade liberalization and political separatism. In a world dominated by trade restrictions, large political units make sense because the size of a market is determined by political boundaries. If free trade prevails relatively small homogeneous political jurisdictions can prosper and benefit from the global marketplace (Alesina and Spolare, 2003). Work on the implications of fiscal unions has also indicated the potential disadvantages of larger units. While larger jurisdictions can achieve benefits in the form of a centralized redistribution system, 'these benefits may be offset (partially or completely) by the increase in the diversity and, thus, in potential conflicts of interests among the citizens of larger jurisdictions' (Alesina and Perotti, 1998).

In recent years the 'politicisation of growth theory' (Hibbs, 2001) has led to a burgeoning of research into the impact on economic growth of politics, policy, and institutional arrangements. Daron Acemoglu and his co-authors have made a highly influential contribution to the debate relating to the 'deeper' institutional determinants of economic growth and the role of politi-

cal distortions as barriers to progress (see Acemoglu, 2003a; Snowden, 2004c). Acemoglu's recent research highlights the importance of 'political barriers to development'. This work focuses on attitudes to change in hierarchical societies. Economists recognize that economic growth is a necessary condition for the elimination of poverty and sustainable increases in living standards. Furthermore, technological change and innovation are key factors in promoting growth. So why do political élites deliberately block the adoption of institutions and policies that would help to eliminate economic backwardness? Acemoglu and Robinson (2000a, 2003) argue that superior institutions and technologies are resisted because they may reduce the political power of the élite. Moreover, the absence of strong institutions allows autocratic rulers to adopt political strategies that are highly effective at defusing any opposition to their regime. As a result economic growth and development stagnate.

1.10 The Renaissance of Economic Growth Research

There is no doubt that one very important consequence arising from the work of Keynes was that it led to a shift of emphasis from the classical long-run issue of economic growth to the shorter-run issue of aggregate instability. As Tobin (1997) emphasizes, Keynesian economics does not pretend to apply to the long-run issues of growth and development. This is in sharp contrast to the work of Adam Smith, David Ricardo and the other classical economists who sought to understand the nature and causes of the 'Wealth of Nations' rather than focus on the issue of short-run instability. This should hardly surprise us given the rapid self-equilibrating properties of the classical macroeconomic model (see Chapter 2).

Even small differences in growth rates of per capita income, if sustained over long periods of time, lead to significant differences in relative living standards between nations. The importance of economic growth as a basis for improvements in human welfare cannot be overstated because the impact of even small differentials in growth rates, when compounded over time, are striking (see Chapter 11). Barro and Sala-i-Martin (1995) provide a simple but illuminating example of the long-term consequences of growth differentials. They note that the US economy grew by an annual average of 1.75 per cent over the period 1870–1990 thereby raising real GDP per capita from \$2244 in 1870 to \$18 258 in 1990 (measured in 1985 dollars). If growth over the same period had been 0.75 per cent, real GDP per capita in 1990 would have been \$5519 rather than \$18 258. If, on the other hand, growth had been 2.75 per cent, then real GDP per capita in the USA by 1990 would have been \$60 841. Note how this amazing difference in outcomes arises from relatively small variations in the growth rate. David Romer (1996) has also expressed the same point succinctly as follows: 'the welfare implications of long-run

growth swamp any possible effects of the short-run fluctuations that macroeconomics traditionally focuses on'. In reviewing the differential growth performances of countries such as India, Egypt, the 'Asian Tigers', Japan and the USA, and the consequences of these differentials for living standards, Lucas (1988) comments that 'the consequences for human welfare involved in questions like these are simply staggering. Once one starts to think about them, it is hard to think about anything else.' For some economists, such as Prescott (1996), the renewed interest in growth over the last 20 years stems from their belief that business cycle fluctuations 'are not costly to society' and that it is more important for economists to worry about 'increasing the rate of increase in economy-wide productivity and not smoothing business fluctuations'. This position had been publicly expressed earlier by Lucas in May 1985 when delivering his Yrjo Jahnsson lectures. There he argued that post-1945 economic stability had been a relatively 'minor problem' especially in comparison 'to the costs of modestly reduced rates of growth' (Lucas, 1987). More recently, Lucas (2003) has repeated this message using US performance over the last 50 years as a benchmark. Lucas argues that 'the potential for welfare gains from better long-run, supply-side policies exceeds by far the potential from further improvements in short-run demand management'.

Given the significant adverse impact that poor growth performance has on economic welfare and the resultant importance attached to growth by economists, it is perhaps surprising that the research effort in this field has been cyclical. Although growth issues were a major concern of the classical economists, during the period 1870–1945 economists' research was heavily influenced by the 'marginalist revolution' and was therefore predominantly micro-oriented, being directed towards issues relating to the efficient allocation of given resources (Blaug, 1997). For a quarter of a century after 1929–33, issues relating to the Great Depression and Keynes's response to that event dominated discussion in macroeconomics.

As we shall discuss in Chapter 11, in the post-1945 period there have been three waves of interest in growth theory (Solow, 1994). The first wave focused on the neo-Keynesian work of Harrod (1939, 1948) and Domar (1947). In the mid-1950s the development of the neoclassical growth model by Solow (1956) and Swan (1956) stimulated a second more lasting and substantial wave of interest, which, after a period of relative neglect between 1970 and 1986, has been reignited (Mankiw et al., 1992). Between 1970 and 1985 macroeconomic research was dominated by theoretical issues relating to the degeneration of the orthodox Keynesian model, new equilibrium theories of the business cycle, supply shocks, stagflation, and the impact of rational expectations on macroeconomic modelling and policy formulation. Although empirical growth-accounting research continued (for example

Denison, 1974), research on the theoretical front in this field ‘effectively died’ in the 1970–85 period because economists had run out of ideas.

The third wave, initiated by the research of Paul Romer and Robert Lucas, led to the development of endogenous growth theory, which emerged in response to theoretical and empirical deficiencies in the neoclassical model. During the 1980s several factors led to a reawakening of theoretical research into the growth process and new directions in empirical work also began to develop. On the theoretical front Paul Romer (1986) began to publish material relating to his 1983 University of Chicago PhD thesis. In the same year, 1986, Baumol and Abramovitz each published highly influential papers relating to the issue of ‘catch-up and convergence’. These contributions were soon followed by the publication of Lucas’s 1985 Marshall lectures given at the University of Cambridge (Lucas, 1987). This work inspired the development of a ‘new’ breed of endogenous growth models and generated renewed interest in empirical and theoretical questions relating to long-run development (P.M. Romer, 1994a; Barro, 1997; Aghion and Howitt, 1998; Jones, 2001a). Another important influence was the growing awareness that the data suggested that there had been a slowdown in productivity growth in the post-1973 period in the major OECD economies (P.M. Romer, 1987a).

In the eighteenth and nineteenth centuries growth had been largely confined to a small number of countries (Pritchett, 1997; Maddison, 2001). The dramatic improvement in living standards that has taken place in the advanced industrial economies since the Industrial Revolution is now spreading to other parts of the world. However, this diffusion has been highly uneven and in some cases negligible. The result of this long period of uneven growth is a pattern of income per capita differentials between the richest and poorest countries of the world that almost defies comprehension. Much of the motivation behind recent research into economic growth derives from concern about the origin and persistence of these enormous cross-country inequalities in income per capita. The origin of this ‘Great Divergence’ in living standards has always been a major source of controversy among economic historians (Pomeranz, 2000). Recently, this issue has also captured the imagination of economists interested in providing a unified theory of growth. Such a theory should account for both the ‘Malthusian growth regime’ witnessed throughout history before the eighteenth century, and the ‘modern growth regime’ that subsequently prevailed in those countries that have experienced an ‘Industrial Revolution’ (see Galor and Weil, 2000). To sum up, the analysis of economic growth has once more become an active and vibrant research area, central to contemporary macroeconomics (Klenow and Rodriguez-Clare, 1997a) and will be discussed more fully in Chapter 11.

In the following chapters we will return to these issues, which over the years have been an important source of controversy. But first we will begin

our tour of twentieth-century developments in macroeconomics with a review of the essential features of the stylized ‘old’ classical model which Keynes attacked in his *General Theory*. The important ‘Keynes versus the classics’ debate sets the scene for subsequent chapters of this book.