> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.
>
> J. M. Keynes

Throughout this book, we have emphasized the usefulness of macroeconomics as a tool for understanding and improving the way the world works. To this aim, we have presented a unified treatment of the field, and have downplayed the historical evolution of ideas over the years as well as important controversies, past and present, which have accompanied these ideas. Focusing on controversies can be fascinating, but it can also cloud the extent of agreement and common understanding, leaving the unsatisfactory impression that macroeconomics is too conflict-ridden to be of any practical use. Once the basic framework is well understood, it is both interesting and illuminating to track the field's intellectual history. In this concluding chapter we present a highly compressed survey of the major steps of the field's development, the key players, and the policy debates. Its emphasis is on the European scene.[1]

20.1 The Keynesian Revolution

John Maynard Keynes, 1883–1946

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The birth of macroeconomics is conventionally associated with the publication in 1936 of Keynes' *The General Theory of Employment, Interest and Money*. Its influence has been phenomenal. Some even claim that it changed more lives in the twentieth century than any other single work. Many factors explain this success.

The book came out towards the end of the Great Depression and can be seen as the response of economic research to challenges of the time. To contemporaries who had witnessed the rapid rise of mass unemployment, the classical laissez-faire view looked factually wrong and almost immoral. Others had already moved in the same direction, but Keynes brought together many apparently disparate themes. The idea that prices do not necessarily clear at full employment had been put forward by the British economist Robert Malthus (1766–1834). Knut Wicksell (1851–1926) and his successors, who came to be known as the 'Stockholm School', had gone quite a long way towards what was to become the *IS* curve. Other economists—including Hjalmar Schacht, who single-handedly vanquished the German hyperinflation in 1923 and later went on to become Hitler's Finance Minister—had long advocated deficit spending on public works during the Great Depression. But Keynes' attack was unique in many ways. *The General Theory* proposed a wholly new concept of equilibrium, even though it took decades to fully decipher what it really meant. It was a combination of scholarly analysis, strident criticism, and practical policy recommendations that appealed to both theoreticians and policy-makers. Keynes did not just aim at fellow researchers. He frequently descended the ivory tower of academia to promote his ideas in the media, where his reputation as a brilliant and provocative polemicist was well established.

The truth is that Keynes was a man of many talents and, by 1936, of great experience as well. As a young economist during the First World War, he had worked in the UK Treasury, which he represented at the Versailles Peace Conference, until he resigned in a rather undiplomatic fashion. In *The Economic Consequences of the Peace*, he criticized the harsh reparations imposed on Germany, maintaining that it would be destabilized by the economic burden of the Treaty. His analysis turned out to be prophetic, and established his reputation among policy-makers. The book also strained Keynes' relations with British government circles until the Second World War. His strident criticism of Chancellor Winston Churchill's decision to return the pound to its pre-war parity did not help in this regard. Maynard, as his friends called him, was also a charismatic intellectual leader. He assembled a group of brilliant economists at Cambridge University who went on to dominate the profession in Britain and beyond.

One important message of the Keynesian revolution was that fiscal policy can be used to fight recessions, in particular when monetary policy is ineffective—either because expansionary monetary policy no longer lowers the nominal interest rate or when investment spending is depressed by bad 'animal spirits'. Deficit spending, as it was then called, was taken on board in many countries after the war, in effect becoming conventional wisdom. German-speaking countries too have been influenced by Keynesian ideas, but scepticism there has been present and, to this day, a large segment of the policy-making and academic establishments see them as dangerous. German reluctance towards Keynesianism is linked to the role that deficit finance had in the hyperinflation of 1922–1923. This mistrust of Keynesian policies has found its way, in a subdued form, in the monetary union's Stability and Growth Pact and in the statements of the European Central Bank (ECB), in which fiscal deficits tend to be seen as a source of concern rather than as a potential means of output stabilization. In most of Europe, though, Keynesian ideas are still alive, although their limits—described in Chapters 16 and 17—are generally well recognized.

Keynes' theory was not fully worked out. *The General Theory* is difficult to read, frequently lacks precision and can sometimes be downright confusing. It fell upon Keynes' disciples to dot the i's. Most of the effort was conducted in his native Britain and in the USA, with some important contributions from other countries, including that of the Polish economist Michal Kalecki (1899–1970), who had anticipated many of Keynes' ideas and went on to try to merge Keynesian and Marxist schools of thought.

Beyond clarifying Keynes' views, one task that his disciples had to grapple with was to reconcile the Keynesian construction with generally accepted theories. It soon emerged, indeed, that the attack on the 'classics', as Keynes labelled established neoclassical economics, was not at all general and rested on the assumption that the price level is constant. This assumption was acceptable in situations of low employment, like the Great Depression, but was seriously at odds with post-war economic conditions, characterized by full employment and, later on, rising inflation. The necessary reconciliation effort, the neoclassical synthesis introduced in Chapter 12, was carried out mostly in the USA, with Nobel Prize laureate Paul Samuelson (1915– 2009) and his MIT colleagues at the forefront, but also by Keynes' colleague in Cambridge, John Hicks (1904–1989), and by Don Patinkin from Hebrew University in Jerusalem (1922–1995).

European macroeconomists were not particularly productive during this period, with a few notable exceptions. Some Swedish economists, under the leadership of Assar Lindbeck (1930–), and their Norwegian colleagues developed a small open economy version of the Keynesian model. Nobel laureates Jan Tinbergen, from the Netherlands, and James Meade (1907–1995), a student of Keynes' in Cambridge, also made major contributions in extending Keynes' framework to the small open economy case. The most innovative construction in the Keynesian tradition was the Mundell–Fleming model presented in Chapter 11. Its architects were Marcus Fleming (1911–1976), a British economist working in the International Monetary Fund, and Nobel laureate Robert Mundell (1932–), who was undoubtedly inspired by the smallness and openness of his native Canada and of Switzerland, where he lived for a time.

An important implication of Keynesian economics was that countries as a whole could be a research subject. Today, it is hard to believe that pre-Keynesian economics was mostly preoccupied with sectors and firms, and had little to say about questions such as

[1] In preparing this chapter, we have benefited from very useful comments and suggestions from Charles Bean, Irwin Collier, Barry Eichengreen, Hans Genberg, Francesco Giavazzi, Guido Tabellini, and Jürgen von Hagen.

growth or employment.[2] In fact, aggregate data, like GDP, the unemployment rate, or the consumer price index, were sporadically collected and seldom the subject of great research interest. The rise of Keynesian economics prompted a vigorous effort at developing the relevant concepts and assembling the data. This effort started in the late 1930s at a time when most of the leading economists were either in the USA or in Great Britain. Unsurprisingly, therefore, the main contributions were developed in these two countries, with early pioneers such as Simon Kuznets (1901–1985) from Columbia University and Richard Stone (1913–1991), a Keynes student from Cambridge, both of whom were eventually awarded the Nobel Prize for their work. Once data was available, and with the advent of the first computers, economists have undertaken to build large-scale models that were meant to mimic the economy. Following early work by Italian-born Nobel laureate Franco Modigliani, these large models have become standard fares in most finance ministries, international organizations, and economic forecasting companies, where they are routinely used to produce forecasts and simulate the effects of policy decisions. Despite the subsequent decline of Keynesian economics, these models continue to exert great influence on day-to-day decisions made by governments, banks, and businesses.

The neoclassical synthesis shows that the Keynesian equilibrium is a special case, which applies when prices are sticky. Obviously, the next task was to explain how prices move, when they eventually do. This led to a search for what was known as the 'missing equation'. This equation was discovered as an empirical regularity by A. W. Phillips (1914–1975) at the London School of Economics, whose work is extensively discussed in Chapter 12. This discovery prompted the next question: What is the theory behind the Phillips curve? Work on this question, mostly in the USA, was well under way just when the curve started to vanish. The disappearance of the Phillips curve, correctly anticipated by Friedman in the late 1960s, paved the way for the rise of the monetarists, a rival school of thought committed to exposing what was seen as fundamental flaws in Keynesian economics.

20.2 The Monetarist Revolution

Milton Friedman, 1912–2006

Source: Copyright Hulton-Deutsch Collection/Corbis.

By the late 1940s, the Keynesian school had established a strong foothold in the USA, where most of macroeconomic research was conducted, but it never enjoyed total supremacy. The University of Chicago, in particular, remained the bastion of the classical economics that Keynes had sought to upend. Keynesian ideas certainly attracted attention at Chicago. In the 1940s, Chicago economist Lloyd Metzler published an influential attempt to characterize Keynes' ideas formally. But the Chicago academic tradition must have seen a fundamental threat in Keynesian macroeconomics. It is thus not surprising that the 'Chicago School' led an intellectual attack against the Keynesians. Eventually, it was as successful as Keynes' own attack against the classics. Part of the success of the Chicago School is due to Milton Friedman, whose many talents matched those of Keynes himself.

Friedman combined extraordinary intellectual vigour, leadership, charisma, government experience, and communication skills. Like Keynes, he spent the war years at the Treasury, the US Treasury in his case, where he contributed to the war effort. Like Keynes, he assembled a group of young economists, who regularly met in the 'Workshop in Money and Banking' and went on to rewrite macroeconomics. Like Keynes, he devoted much time and effort to popularize his ideas, writing a regular column in the US magazine *Newsweek* and becoming a popular guest on television shows. And, like Keynes, he did not shy from contacts with politicians, providing advice to unsuccessful presidential candidate Barry Goldwater, as well as to the considerably more successful President Ronald Reagan and to Prime Minister Margaret Thatcher. Many of his Chicago associates became known as the 'Chicago boys'. They achieved considerable—and still controversial—influence in South America and elsewhere.

Friedman pursued several ideas, all of which undermined the key building blocks of Keynesian economics. First, he was an unabashed defender of free markets, which Keynes saw as chronically prone to failures. This led him to actively promote the view, long-advocated by the Austrian-born economist Friedrich von Hayek (1899–1992), that governments are a threat to freedom, and not just in economic matters.[3] Friedman and his colleagues resuscitated the influence of the laissez-faire school, which had been shattered after the Great Depression.

Second, Friedman confronted Keynes' view that fiscal policy is a useful tool for macroeconomic stabilization and that monetary policy is useless. The label 'monetarist', widely applied to the Chicago School, comes from this aspect of Friedman's work.[4] His *A Monetary History of the United States, 1867–1960*, written in 1963 jointly with Anna J. Schwartz (1915–), is generally regarded as a masterpiece that fundamentally changed the way we look at monetary policy. At the empirical level, this book attributes the Great Depression to bad monetary policy, in contrast with Keynes, who tended to blame procyclical fiscal policies. At the theoretical level, the book re-established the classic 'quantity equation' $MV = PY$, where V is the velocity of money. This equation, which was dismissed by the *LM* equation, brings home the neutrality of money: if velocity V and Y are taken as exogenous, the price level P is directly driven by money. In the classical view, Y is at full employment and V is constant, whereas in the Keynesian view Y is highly variable, P is constant, and V depends on the interest rate.[5] Monetary neutrality, an old wisdom of classical economics discarded during the Keynesian heydays, returned and has not left us ever since. Its implications are profound and lie at the core of the theory and practice of central banking, as explained in Chapter 9.

Third, in a careful study of consumption patterns in the USA, *A Theory of the Consumption Function*, a book published in 1956, Friedman argued that the Keynesian function $C = C(Y)$ had little theoretical foundation and questionable empirical validity. Instead, he put forward the permanent income hypothesis, which relates consumption to permanent income, or wealth. This effectively reinvented the intertemporal analysis presented in Chapters 7 and 8, and previously explored by US economist Irving Fisher (1867–1947) of Yale University. The important consequence of this work was to weaken the significance of the Keynesian multiplier and the view that fiscal policy can be a tool for output stabilization. Later on, the Keynesians restored some of the clout of the old consumption function by arguing that many consumers are credit rationed, as explained in Chapter 8.

Finally, in what may have been his greatest triumph, Friedman explained why the Phillips curve, then still considered as the missing equation linking the short

[2] An important exception was the work of Gottfried Haberler (1900–1995), who in 1937 published an important compendium of contemporary business cycle theories—with the important exception of Keynes', which Haberler later strongly criticized.

[3] Friedrich von Hayek (1899–1992), another Nobel Prize winner, was a prominent product of the Austrian School, which was disbanded in the late 1930s when the Nazis took over. Hayek moved first to the London School of Economics and in 1950 to Chicago, where he was a colleague of Milton Friedman.

[4] In a true gesture of modesty, Friedman is known to have given credit to Henry Simons (1889–1946) for founding the Chicago School.

[5] The debate was really about which assumption one is willing to make. There is no incompatibility between the quantity and *TR* equations: the demand for money $M/P = k(i)Y$ implies that $V = 1/k(i)$. Inserting a Taylor rule for i yields an expression for velocity. But this must be considered along with the *IS* equation to explain the interest rate, and with the *AS* curve to explain inflation, while the quantity equation was originally meant to be sufficient for understanding the price level and inflation. The quantity equation is also known as the 'Cambridge equation', in deference to pre-Keynes Cambridge.

and long run, would vanish as soon as the authorities attempted to exploit the output–inflation trade-off. Not only did he restore the importance of expectations—and thus established the expectations-augmented Phillips curve—but he restated the long-run neutrality proposition—and thus invented the long-run vertical aggregate supply schedule. His work was published in 1968, and the Phillips curve went awry thereafter, in the early 1970s. Not only were the Keynesians proven wrong, they were once more 'missing an equation'. Monetarism became the new accepted wisdom, in academic circles first, and then among policy-makers. It is important to note, however, that Nobel laureate Edmund Phelps (1933–), from New York's Columbia University, who had reached the same result as Friedman and at roughly the same time, regarded himself as a Keynesian. Phelps essentially foreshadows the eclectic future of modern macroeconomics, as presented in this book, which accepts the expectations-augmented Phillips curve as the missing equation, even if it means that there is no lasting trade-off between output and inflation.

In general, Europe was slow to recognize the power of the monetarists' attack, and did not contribute much to the research effort. In the UK, the academic establishment was dominated by Keynesians, most of whom refused to acknowledge that a major battle had been lost. The election of Mrs Thatcher changed all that. She brought in Milton Friedman as an adviser, proclaiming that her government would follow the master's precepts, including rolling back government, pushing for wage stability by destroying the trade unions' grip on labour markets and, of course, a strict application of the monetary neutrality principle. She had been converted to monetarism by two close advisers working in a think tank that she had created, the Centre for Policy Studies: Alan Walters (1926–2009), a British economist then working at Johns Hopkins University in the USA, and Patrick Minford (1943–), who had resisted Keynesian influence in his bastion at Liverpool University. When, early on during her first term, the scope of Thatcher's policy intentions became clear, 364 academic economists signed a manifesto that promised disaster if these policies were implemented. Two decades later, most of the signatories agree that 'we all are Thatcherites now'.

Elsewhere in Europe, the evolution was gradual, mostly the result of generation changes, as freshly graduated macroeconomists started to popularize either monetarist ideas or less orthodox versions of Keynesian economics. Still, in some countries, such as France, Keynesian ideas remain to this day the dominant reference in policy-making circles. In the 1970s, two French economists, Edmond Malinvaud (1923–), who served for two decades as Head of the National Statistical Institute, and Jean-Pascal Benassy (1948–) of the Centre National de la Recherche Scientifique, had already developed a disequilibrium interpretation of the Keynesian model. The particular feature of this interpretation, which has now been abandoned, is that it assumes that there can be lasting excess demand or supply in goods and labour markets.

In German-speaking countries, as mentioned earlier, Keynesian ideas never quite displaced the classical view, so there was little need for a monetarist counter-revolution. Economists and policy-makers saw the movement as a vindication of their own views, even though monetarism is considerably more subtle than classical economics. During the years of Keynesian domination, the flame of classical economics was carefully maintained at the annual Konstanz seminar, which was initially created by two early monetarists, the Swiss economist Karl Brunner (1916–1989), who worked at Rochester University, and Alan Meltzer (1928–) from Carnegie Mellon University in Pittsburgh.[6] The Konstanz Seminar still meets every year.

The Chicago school also contributed much to our understanding of the open economies. Much of Mundell's work was produced when he was in Chicago, where he also trained a generation of international macroeconomists who developed the 'monetary approach to the exchange rate'. This approach shapes much of Chapter 15, including the stylized facts proposed by Michael Mussa (1944–2012) and the overshooting hypothesis of German-born Rudiger Dornbusch (1942–2002), both students of Mundell. Many other Chicago economists—including Mundell himself—worked at the IMF, where they forged the Fund's doctrine and produced important work under the leadership of Dutch economist Jacques J. Polak (1914–2010).

[6] The tradition at Konstanz is to display a flag that bears '$MV = PY$'.

Yet, Friedman's ideas have not always been widely accepted. One of his other major contributions is the intellectual defence of freely flexible exchange rates, as noted in Chapter 19. He gathered ammunition for this position when he was in Paris in 1950, working at the US governmental agency which administered the Marshall Plan. At the time, he concluded that the European Common Market could not work with fixed exchange rates and he considered the European Monetary Union as a mistake. This view receives much support in the UK.

20.3 The Rational Expectations Revolution

Robert Lucas Jr, 1937–

Source: The Nobel Foundation.

Thomas Sargent, 1943–

Source: New York University.

The attack on Keynesian economics was by no means over yet. Another blow came with the rational expectations revolution. The expectations-augmented Phillips curve of Friedman and Phelps had left an important question unanswered: What drives expectations? Most economists thought that inflation expectations gradually caught up with actually observed inflation, i.e. they were only taking account of what Chapter 12 defines as the backward-looking component of underlying inflation. Although Phelps had made some headway in introducing the forward-looking component, the next major step was achieved in Chicago again where Nobel Prize laureate Robert E. Lucas Jr, a student of Friedman, spearheaded the rational expectations revolution.[7] Rational expectations are presented in Chapter 7 and this idea permeates much of this textbook. Lucas and his colleagues[8] argued that if the forward-looking component dominates and if expectations are not systematically biased, the Phillips curve is always vertical, in the short as well as in the long run. As a result, they asserted, systematic policy cannot work. In particular, monetary policy affects output and employment only to the extent that it creates inflationary surprises. Since creating short-lived surprises is hardly a basis for macroeconomic policy, the circle was closed. Friedman's contribution meant that fiscal policy is not helpful but that monetary policy is a powerful instrument, although one whose effects are eventually dissipated in inflation. The rational expectations revolution's message was that macroeconomic policies should not be used on and off with complete discretion. Instead, policy should obey rules and aim at establishing credibility for adhering to the rules.[9] This was not a complete vindication of the classic laissez-faire approach, but an indictment of Keynesian policy activism.

The view that 'only unanticipated money matters' was never very popular with policy-makers. One could say that it is hardly surprising that central banks explicitly reject the view that their role is limited to creating surprises. Yet, empirical evidence failed to support this view, paving the way for the New Keynesian macroeconomics.

[7] Lucas was not the first to formulate this view. It was first advanced by a number of American economists from Carnegie Mellon University—they inspired Lucas, who spent several years there before taking up a chair in Chicago—John Muth (1930–2005), Ed Prescott (1944–), and Finn Kydland (1943–).

[8] In particular Thomas Sargent (1943–) and Neil Wallace (1939–).

[9] The preference of rules over discretion was first expressed by Milton Friedman in an essay written in the 1950s.

20.4 The Microfoundations of Macroeconomics

Finn Kydland, 1943–

Source: Carnegie Mellon University.

Edward Prescott, 1940–

Source: Federal Reserve Bank of Minneapolis.

Because of its compelling logic, the rational expectations hypothesis attracted immense interest and opened the way for further innovations in other directions. Clearly, if it is appropriate to assume that expectations are rational, then why shouldn't all other economic decisions be rational as well? Researchers at 'freshwater universities' in the USA—Chicago, Minnesota, Rochester, Carnegie-Mellon, and University of Pennsylvania—have established the microeconomic foundations of the consumption, investment, and primary account functions studied in Part II of this book. European economists from all countries—many after a sojourn in those US universities—are deeply involved in this research programme.

Insisting on the rigorous discipline of microeconomic foundations may be intellectually attractive, yet business cycles remain a fact of life that must be explained. This led neoclassical economists to the Real Business Cycles (RBC) research programme discussed in Chapter 16. The aim of this effort is to show that models with flexible prices and fully rational agents—in brief, the Robinson Crusoe parable developed in Part II—can reproduce the key features of actual business cycles. The 'RBC school', inspired by the American Ed Prescott from Arizona University and Norwegian-born Finn Kydland from Carnegie Mellon University, has a significant following in Europe. These researchers received the Nobel Prize for their work in 2004.

20.5 New Keynesian Macroeconomics: The Latest Synthesis

Michael Woodford, 1955–

Source: Photo courtesy of Michael Woodford.

John Taylor, 1946–

Source: <www.stanford.edu>.

Despite its intellectual attractiveness, the RBC approach was not a great empirical success. Many of the most important stylized facts of the business cycle remain unaccounted for. Price stickiness simply

appears to be a fact.[10] This opened up an opportunity for the New Keynesians, who were already at work on their own response to the rational expectations revolution. Their main aim has been to show that price stickiness is not incompatible with microeconomic foundations and full rationality. New Keynesians have thus been able to produce a new synthesis, which fully rests on rational behaviour but delivers the traditional Keynesian results. Much of this work has been carried out at traditionally Keynesian 'saltwater universities' in the USA (Harvard, MIT, Yale, Princeton, Berkeley),[11] with some important contributions from Michael Woodford, now at Columbia University in New York. In Europe, Jordi Gali, from Pompeu Fabra University in Barcelona, has further developed the microfoundations of the expectations-augmented Phillips curve.

The synthesis starts with RBC microeconomic foundations—complete with rational expectations—and adds price stickiness. The result turns out to be very similar to the *AS–AD* presented in Chapter 13. It contains an *IS* curve, which incorporates the aspect that next period's demand affects that of the current period—and reflects the idea that households strive to smooth their consumption. Second, it also includes a Phillips curve that is almost identical to the one initially proposed by Friedman and Phelps. It allows both for rational expectations of price setters, but admits that some agents do not change prices very often, or do not have the information or the wherewithal to do so. Most importantly, the new Keynesian Phillips curve implies that 'anticipated money matters', so that monetary policy can systematically affect output. Third, it also includes the Taylor rule, named after John Taylor from Stanford University, which is seen as the deliberate and systematic response of monetary policy to fluctuations in inflation and output.

The New Keynesian framework has been wholeheartedly embraced by policy-makers who now read the same books as economists. Importantly, the new *IS* curve and the old-new Phillips curve attract attention to the crucial role of expectations, which has led central banks around the world to become more transparent about their own forecasts and intentions. From the policy perspective, the view that fiscal and monetary policies can play a role as tools for output and employment stabilization is now generally accepted. So too is the recognition that the role of expectations requires much more prudence and care than the traditional Keynesians dared to admit, as explained in Chapters 16 and 17.

20.6 Institutional and Political Economics

Since the rational expectations revolution in the early 1970s, macroeconomics has managed to avoid further paradigmatic earthquakes. A number of innovations have occurred at the frontier between economics and political science. This ongoing research programme starts from the obvious observation that

Friedrich August von Hayek, 1889–1992

Source: Copyright Bettmann/Corbis.

James Buchanan, 1919–

Source: Photo courtesy of James Buchanan.

[10] This is hardly news! Milton Friedman and Anna Schwarz wrote extensively on long and variable lags with which monetary changes affect the price level. Even the old Scot David Hume (1711–1776) was fascinated by the fact that gold inflows in seventeenth-century Spain had so little short-run influence on the price level.

[11] Saltwater universities are located on the East and West coasts of the USA, while freshwater universities are inland, often close to the Great Lakes.