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Abstract

This article explains the part that Meade played in the creation of Keynes's *General Theory*, describes his work with Keynes during the Second World War in the creation of the IMF and the GATT, and summarizes the ideas in *The Theory of International Economic Policy* for which Meade was awarded the Nobel Prize in 1977. It also sets out the role that Meade played in the construction of the inflation-targeting regime which became the centrepiece of British macroeconomic policymaking in the 1990s.

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James Meade was one of the truly great economists of the 20th century. He was profoundly internationalist in his outlook, and was awarded the Nobel Memorial Prize in Economics in 1977, jointly with Bertil Ohlin, for *The Theory of International Economic Policy* (1951–5). But his contributions spanned the whole of the discipline. He made fundamental, and widely influential, contributions to economic theory, in both macroeconomics and microeconomics. More than this, his main concern was always with the part that economic analysis has to play in the solution of practical economic policy problems. As a result, he contributed to the theory of economic policy in a very wide range of subjects, including macroeconomic management, trade policy reform, public finance, economic growth, income distribution, wage determination, and population growth. He served actively in policymaking as an economist for the League of Nations, and in the Economic Section of the UK Cabinet Office during, and immediately after, the Second World War. In all that he did, Meade saw the role of an economist as helping to design a better society – both by the creation of good institutions of economic management and by the provision of appropriate incentives for private individuals.

In this article I concentrate on four main issues. I first explain the large part that Meade played in the creation of Keynes's *General Theory* in the 1930s. After this, I describe his work with Keynes during the Second World War in the creation of the International Monetary Fund and the GATT (which has since become the World Trade Organization, or WTO). I then turn to Meade's work on international economics at the London School of Economics (LSE), immediately after the war, for which he was awarded the Nobel Prize; I spend some time showing how this theoretical work was related to his earlier work on policy with Keynes. Finally, I set out the role that Meade played, along with a group of young economists to which I belonged, in the construction of the inflation-targeting regime that became the centrepiece of British macroeconomic policymaking in the 1990s.

1. Activities before the Second World War: Keynesian macroeconomics

Meade was born on 23 June 1907 in Swanage, Dorset, and brought up in Bath. He went to school at Malvern College, and then won a scholarship in classics to Oriel College in Oxford. But like many others of his generation he was appalled by the problem of mass unemployment, which, as he said, caused 'poverty in the midst of plenty'. As a result he turned to the study of economics for the last two years of his

university education. Meade gained greatly from studying classics, but, as a result of doing so, he had to teach himself the mathematics that he later used extensively.

Immediately upon graduating in 1930, Meade was elected to a fellowship at Hertford College, and appointed to a lectureship in economics at Oxford University. But in October 1930 his college first sent him to Cambridge for the academic year 1930/31, 'to learn my subject before I started to teach it. I had the greatest good fortune of being taken into Trinity College ... by Dennis Robertson, to whose teaching that year I owe a deep debt of gratitude. At an early stage he told me that there was a young man in Kings called Richard Kahn whom I should get to know' (Meade, 1983b, p. 263).

And so Meade spent a formative and creative year as a member of the 'Circus' which was gathered around Keynes. This group of people were debating Keynes' *Treatise on Money* (Keynes, 1930) which had just been published, and included Joan and Austin Robinson, and Piero Sraffa, as well as Kahn. Meade enjoyed describing the 'workshop style' of the Circus meetings. Keynes took no part in the proceedings, but after each meeting Richard Kahn orally recounted to Keynes the subject matter of the discussions and the lines of argument.

From the point of view of a humble mortal like myself Keynes seemed to play the role of God in a morality play; he dominated the play but rarely appeared on the stage. Kahn was the Messenger Angel who brought messages and problems from Keynes to the 'Circus' and went back to Heaven with the result of our deliberations. (Keynes, 1971–88 vol. 13, p. 339; see also p. 338)

The casting of Keynes in this role was first suggested by Meade's wife Margaret in 1934 when they were staying for the weekend with Austin and Joan Robinson in Cambridge. That weekend, too, was dominated by messages from people who had just spoken with Keynes, though Keynes himself never appeared in person.

The Circus was discussing the failure of Keynes's *Treatise*. Keynes had expected that book to become his magnum opus. In it he set out the theoretical work which he had done since the end of the First World War, about the causes of the economic cycle, and about how this cycle should be managed on a national basis and internationally. There is much modern macroeconomics in the *Treatise*, and the international macroeconomics is particularly good: it is possible to find elements of

the Swan diagram, of the Fleming–Mundell model, and even of the Dornbusch model (see Vines, 2003). But the *Treatise* contains a fatal flaw. It aims to analyse the problem of the economic cycle, but the discussion rests upon a formal model in which the level of economic activity is exogenous. This mistaken model is nevertheless of interest because it contains the necessary clues about what Keynes needed to do next. In the *Treatise*, an increase in aggregate demand, caused – say – by an exogenous increase in investment, and not prevented by the central bank from having an overall effect on aggregate demand, would cause demand to increase relative to supply, which was assumed to be fixed, and so would cause a rise in the level of prices. This would redistribute income to profits, away from wages, because the level of the money wage is ‘somewhat sticky’ in the model. That would raise the overall level of savings, because the propensity to save is assumed to be higher for capitalists than for workers. A new equilibrium would be regained after the working out of a ‘multiplier’ process: one in which the price level rises by the amount necessary to re-equilibrate leakages (the extra savings) with injections (the increased investment). This all makes sense, except if the model is meant to help in a discussion of booms and slumps in *output*, which it cannot do because output is exogenous. Sorting out this mess required Keynes to write the *General Theory of Employment, Interest and Money*, which took him until 1936.

By the time Meade arrived in Cambridge in October, Kahn had already drafted his famous article on the ‘multiplier’ (Kahn, 1931). In this piece Kahn showed that, if output is endogenous, one can sum an infinite geometric series to show that the overall effect on output of an increase in investment is ‘multiplied’ because of the increases in consumption which happen as output increases. It appears that it was Meade, the young graduate student from Oxford, who showed how Kahn’s multiplier analysis could be connected with Keynes’ argument in the *Treatise*. There were two steps in this demonstration.

First, Meade showed, by summing the series of the effects of output on savings instead of the series of the effects of output on consumption, that movements in output would cause an increase in savings which would be equal to the original increase in investment. This idea, called ‘Mr Meade’s Relation’ in Kahn’s article, was written down in a note which was subsequently lost. It has become fundamental to our understanding of the multiplier process, and is explained in all basic macroeconomics textbooks. Meade (1993) explains the way in which his approach was complementary

to that of Kahn. This approach was useful to the Circus, in that it showed how Kahn's multiplier process was a flex-output version of the fixed-output argument of the *Treatise* explained above.

Meade once described the second step of his demonstration to me as follows. "I said the following to the other members of the Circus. 'Haven't any of you read Marshall's *Principles of Economics*? In that book, in the short run, the economy lies on a short-run, upward-sloping, supply curve. But that curve adds an extra equation to the model. This means that – in comparison with the model in the *Treatise* – we can make *both* prices *and* output endogenous at the same time.' " This second idea of Meade's is explained, with much less clarity, in Kahn's article. Once it was properly understood, it led the Circus to the view that it is primarily variations in the level of *output* which bring savings into line with investment, and so re-establish the conditions of macroeconomic equilibrium, rather than variations only in the level of *prices*, as had been supposed, unsatisfactorily, by Keynes in the *Treatise*. Kahn himself warmly acknowledged his debt to Meade, both in his article of 1931, and in his fascinating account of the period published in 1984 and called *The Making of Keynes' General Theory* (Kahn, 1984).

Meade stated (Keynes, 1971–88, vol. 13, p. 342) that when he returned to Oxford in 1931 he took back with him in his head 'most of the essential ingredients of the subsequent system of the *General Theory*'. In his 'Simplified model of Mr Keynes' system' (Meade, 1937) Meade set out these 'essential ingredients' in a system of eight equations, which included those of the IS–LM model. It is known that Hicks saw a draft of this paper before he prepared his own celebrated article explaining the IS–LM system (Hicks, 1937); indeed Hicks uses Meade's notation in his presentation (see Young, 1987). Meade's 'simplified model' is more general than that of Hicks, because it includes the upward-sloping supply curve discussed above. It therefore enables one to see *much* more of what is going on in the *General Theory*. But Meade's article is very difficult to understand, because it takes so much for granted. One can read it carefully without ever seeing the point that Hicks was concerned to make about the relationship between Keynes and the 'classics', and it was Hicks who invented the famous diagram to explain this point. This appears to be the first of a number of occasions during Meade's career on which he would set out a fully specified piece of economic theory, only to find that someone else would extract a simple, essential, idea from what Meade had written, publish it, and become famous

as a consequence.

Meade taught in Oxford until 1937. During this period he synthesized with great clarity the ideas of the Keynesian Revolution in *An Introduction to Economic Analysis and Policy* (1936), published almost simultaneously with the *General Theory*. This was the first-ever economics textbook: until then books had been written as a means of expounding new ideas in economics. Many undergraduates in Cambridge at that time were confused by the turbulent debate concerning the Keynesian Revolution which swirled around them, and bemused by the associated misunderstandings, a number of which seemed to be deliberate. Subsequent oral tradition in Cambridge maintained that many of these people found Meade's book exceptionally helpful, since it cut straight through all of these difficulties.

Interestingly, the Keynesian model is expounded in Meade's book using an exogenous rate of interest. That is, Meade set out the 'Keynesian-cross' version of Keynes's model, rather than setting out the full IS–LM system. My own view of the reason for this is that Meade never really believed in the LM curve and so thought, like many of us now do, that the IS–LM system was a distraction. The reason that I say this is that in Meade (1937) he discusses the (realistic) possibility that banks might adjust the quantity of money, in the face of shocks to the economy, so as to keep the interest rate unchanged, unlike what happens in the IS–LM system (except in an extreme case). This view of his was in turn based on the analysis in his first published article (Meade, 1934), in which he invented the money-multiplier – quite independently of the work in the United States begun by Phillips (1920) – and in which he carefully showed what banks would need to do in order to behave in this way. That Meade should have presented the Keynesian system in this way right back at the beginning, even although he fully understood the IS–LM system, has implications for understanding why – as discussed below – he proceeded the same way when he wrote *The Balance of Payments* in the late 1940s.

Economic Analysis and Policy also contains a discussion of longer-run growth, and presents an exposition of the Ramsey model of optimal growth. This was nearly ten years before Harrod and Domar invented what now looks like a very primitive version of growth theory, and long before the famous papers of Solow (1956) and Swan (1956), who invented a simplified version of the Ramsey model, in which the savings rate is *exogenous*. In two key pages, published 20 years before the papers by Swan and Solow, Meade explains how the optimal savings rate could be chosen

endogenously in order to produce a welfare-maximizing growth process. These pages provide an astonishingly clear verbal exposition of the first order-conditions which must be satisfied if growth is to be optimal.

A second edition of *Economic Analysis and Policy* was published in 1937. This gave an exposition of the new ideas in imperfect competition, invented by Edwin Chamberlin and Joan Robinson, which were challenging Marshallian microeconomics in the 1930s (see Shackle, 1967). These ideas only really bore fruit in mainstream microeconomics, and in macroeconomics, in the 1970s and 1980s, after the rise of game theory. But they had a more or less immediate effect on Meade's work in macroeconomics, as I will show below.

Economic Analysis and Policy also includes a section on problems of international order and disorder, which shows that, already as a young man, Meade (unlike many in Britain and America at this time) was thinking about the macroeconomic problems of the world, as distinct from those of an individual nation. In this part of the book, Meade expands on the ideas on international macroeconomics, which were already to be found in Keynes's *Treatise*, as I have described above. (Notably, Joan Robinson, 1937, and Roy Harrod, 1933, were also busy doing the same thing.) Meade's volume ends with a prescient chapter on the economic causes of war. It is chilling to re-read this chapter, written three or four years before the outbreak of the Second World War. One also realizes that many of the problems connected with internationally ill-coordinated macroeconomic policies, which emerged in the world economy in the 1980s, and which have re-emerged at the beginning of the new millennium, are very like those which Meade wrote about nearly 75 years ago.

Throughout his time at Oxford, Meade was actively involved with the group of Fabian socialist intellectuals who were helping the British Labour Party to recover its sense of purpose, after the disastrous collapse of the Labour Government in 1931. Meade contributed to discussions across the same wide range of macroeconomic, microeconomic and international issues that he had treated in *Economic Analysis and Policy*, and he was most influential in his advocacy of expansionary Keynesian policies (Durbin, 1985, see especially pp. 136–44, 194–8, 211–12 and 220).

Meade elaborated on this last theme in *Consumers' Credits and Unemployment* (1938). In this work, he proposes Keynesian demand management in the form of *automatic*, countercyclical variations in taxation to stabilize

macroeconomic fluctuations. This book foreshadows both the Full Employment White Paper of 1944, and the nominal-income targeting project on which he worked for ten years from 1978, both of which are discussed in more detail below.

Consumers' Credits and Unemployment is perhaps the earliest official published advocacy of fine-tuned Keynesian policies.

In 1937 Meade went with his wife and young family to Geneva, where he was to stay for three years, as an economist for the League of Nations. Meade often spoke with admiration of the remarkable band that were assembled there, which included Tinbergen, Koopmans, Haberler, Nurkse, and Marcus Fleming. His job was to prepare, more or less single-handed, the *World Economic Survey* (the forerunner of the present IMF *World Economic Outlook*) and he transformed this publication. Keynes was much influenced by Meade's work in Geneva. In the *General Theory*, Keynes had made use of an upward-sloping short-run supply curve, as described above in my account of the discussions of the Circus, which relies on goods being produced in a manner subject to diminishing returns, and being supplied under competitive conditions. Keynes's important article of 1939 makes extensive reference to Meade's work, and then goes on to argue that the quantity produced in an economy is determined by demand, even if there are constant marginal costs. But this was inconsistent with the competitive analysis that Keynes had utilised in the *General Theory*, which requires the assumption of increasing marginal costs. This article by Keynes was exceptionally difficult to understand. It was extensively discussed in Cambridge in the 1970s, when people were comparing Keynes's macroeconomics with that of Kalecki, who had carefully evaded this difficulty by assuming 'markup' pricing. The confusion was resolved only by the arrival of the classic Dixit and Stiglitz (1977) paper. That paper brought Chamberlin's ideas about imperfect competition into macroeconomics, suggesting a setup in which each individual profit-maximizing producer faces a downward-sloping demand curve and sets prices above marginal costs, but in which the existence of free entry prevents the emergence of monopoly profits. I know, from working with Meade from the late 1970s onwards, that the standard macroeconomic model which he used daily, as part of his mental equipment, had this feature, and I believe that, unlike many others, this had been true for him since the mid-1930s, when he wrote the material on imperfect competition in *Economic Analysis and Policy*, which I described above. It is probable that this framework influenced his empirical work in Geneva, and thus influenced Keynes's

article of 1939.

The war finally caused the Meades to leave Geneva for London in 1940, with three young children, the smallest a three-week old infant. They set out in a small car for one of the Channel ports, not knowing that at this very time the Germans had broken through at Sedan. After an increasingly desperate journey the family ended up in Nantes as refugees, and finally crossed the Channel in an RAF ‘transport ship’ – a converted tramp steamer – at the very time of the Dunkirk evacuation.

2. The war years, 1940–45: building the post-war world order

On his return to Britain, Meade was brought into the Economic Section of the Cabinet Office. There was a grim feeling of impotence amongst the economists, who wished to do something for the war effort. Keynes’s *How to Pay for the War* (Keynes, 1940) had just been published. Meade therefore set to work on a set of national accounts, so that, at the least, those making war policy might be able to attach some numbers to Keynes’s ideas. Richard Stone who had only recently graduated in economics from Gonville and Caius College, Cambridge, was brought in to help with this work. Together they produced what is probably the first full logical structure of ‘double-entry’ national accounts (Meade and Stone, 1941; 1944). Meade recalled how in the statistical work he quickly became Stone’s research assistant – and so began Stone’s work on national income accounting that eventually led to another Nobel Prize.

During his subsequent time at the Economic Section, Meade worked in three crucial areas. He was to become Director of the Economic Section from 1945 to 1947.

First, Meade was involved in the planning for post-war international monetary arrangements. He participated in the initial excited responses in Whitehall to Keynes’s ‘Clearing Union’ plan for a new post-war international monetary system (Keynes, 1971–88, vol. 25, pp. 41–67; see also van Dormael, 1978). He became a member of the British delegation to Washington in September 1943 which discussed these issues with Harry Dexter White and others (Keynes, 1971–88, vol. 25, pp. 338 ff.). And he took part in the subsequent British deliberations, leading up to the Bretton Woods conference in 1944 at which the International Monetary Fund was established.

I have described the analytical content of these negotiations in some detail in Vines (2003), drawing on the wonderful historical account by Skidelsky (2000), and on the papers of Keynes and Meade. Keynes’s policy objectives were to create a post-war global system in which full-employment policies could be adopted by the Allied

nations, and in which such full-employment policies could be reconciled with the requirement that their trade balances not get too far out of line. Keynes's initial response to this problem was a highly illiberal one: balance-of-payments restrictions should be the mechanism which re-equilibrated exports with imports after any negative external shock to a country (through tariffs, quotas, and 'managed' trade). He was persuaded away from this view by an 'outstandingly able group of economists' (Williamson, 1983a, p. 91) which included Meade and also Marcus Fleming, Roy Harrod, Lionel Robbins, and Dennis Robertson. This group managed to convince Keynes that exchange rate devaluation should be the adjustment device. Keynes vacillated literally for years on the issue, deliberately suspending judgement, drawing forth from this talented group an extraordinary collection of papers, particularly on the tariffs-versus-devaluation issue (Keynes, 1971–88, vol. 26, ch. 2 and pp. 239–327). James Meade once told me that, one day in a particularly tedious meeting at the Board of Trade in 1944, Keynes scribbled a note to him to the effect that he (Keynes) was, at last, intellectually converted to a regime in which external adjustment would be achieved by exchange-rate change.

Second, when Keynes produced his Clearing Union plan, Meade quickly produced a project for a 'Commercial Union' as a companion piece. It was on the basis of this document that the debate in Whitehall on post-war commercial policy (concerning such sensitive issues as imperial preference and the use of import restrictions on balance-of-payments grounds) took place. Meade devoted much time to drafting and redrafting these ideas and, as he said, 'helping to get them through Whitehall'. And it was to promote these ideas that he was a member of the September 1943 delegation to Washington (mentioned above), and he was subsequently a member of the British delegation to the international conferences in London in 1946 and in Geneva in 1947 which worked on a charter for a proposed International Trade Organization (ITO). Although in the end the ITO proved to be unacceptable to the United States, the Geneva conference resulted in a General Agreement on Tariffs and Trade (GATT) which took on many of the projected functions of the ITO (see Keynes, 1971–88, vol. 26, ch. 2). And the GATT was eventually turned into the World Trade Organization (WTO) in 1994.

These international discussions laid down, amongst other things, the conditions under which nations should be permitted to form regional free-trade-areas, in which discriminatory regional preference is allowed to overrule the most-favoured-

nation rule for international trade which lies at the centre of the WTO, and which lay at the centre of the GATT. Those discussions duly led to Article 24 of the GATT (and to a similar provisions in the international agreements which underpin the WTO). The technical discussions on this Article were particularly difficult, since the relevant theory by Viner and Meade, on ‘trade creation’ and ‘trade diversion’, had not yet been invented. (This theory is discussed in Section 3 below.) The discussions also contained much which was non-technical, which dealt more fundamentally with the nature of the international trading system. On one occasion, Meade told me, he could not understand why a senior US official – I believe that it was Dean Acheson – was speaking up so strongly against imperial preference, and yet so much in favour of Britain joining up with European nations, a joining-up which has, in due course, led to the European Common Market, and ultimately to the creation of the European Union. ‘I have relatives who are farmers in New Zealand’, said Meade, ‘who sell their lamb to Britain. They a natural part of the British economic system. Why should we not have an Imperial Free Trade Area which includes them? This would be just like your setup in the US, in which you have a free trade area which includes all 50 of your states?’. ‘But there is a lot of water between Britain and New Zealand’, replied Acheson. ‘There is also quite a lot of water between Britain and France’, replied Meade.

If we take these two activities together, it is clear that Meade was one of the architects, on both the monetary side and the trade side, of the liberal world economic regime which sustained the long post-war boom in the Western world from 1945 to 1973. Meade always believed that *both* pieces of this regime stand or fall together. Free trade would – he thought – be resisted if there were severe global macroeconomic imbalances. (This point became clear once again in the mid-1980s, and it is becoming even more clear in the mid-2000s. But conversely, if there is not free trade then macroeconomic order will be difficult to maintain, since devaluation will tend to be much less effective at adjusting trade imbalances. Meade summarized this point clearly, in a diary entry which he made on 31 December 1944 (Meade, 1988–90, vol. 4, p. 22.) He emphasized ‘the need for flexible exchange rates to adjust balance of payments [to avoid pushing the burden of adjustment onto] rigid trade controls ...in a world in which internal wage levels were not easily reduced. [But such adjustment might be] more easily acceptable if it was preceded by an international agreement to lower trade barriers, since in that case smaller movements in exchange

rates would be required'. This belief – that macro management and micro liberalism should go together – had already informed his work in the 1930s. It would form the central organizing principle for the work that Meade did at the LSE on international economics, which I discuss immediately below. As noted in the introduction and conclusion to this article, it recurs again and again throughout his work.

At the meeting at the Board of Trade in 1944, to which I referred above, Keynes followed up his scribble with a sketch, on the back of an envelope, of the desired features of the whole international system, that he and his colleagues were trying to build (see Vines, 2003). This sketch went something like the following.

<i>Objective</i>	<i>Instrument (s)</i>	<i>Responsible authority</i>
Full employment	Demand management (mainly fiscal)	National governments
Balance of payments adjustment	Pegged but adjustable exchange rates	International Monetary Fund
Promotion of international trade	Tariff reductions etc.	International Trade Organisation
Economic development	Official international lending	World Bank

Keynes was aware that this plan would need to work, not just for individual countries, but for the global system as a whole. (It would have been surprising if someone who had invented macroeconomics did not take such an overall, systemic, view.) I discuss in some detail in Vines (2003) how Keynes feared that difficulties in the balance-of-payments adjustment process might impose, on deficit countries, an obligation to deflate demand below full employment, something which might not be matched by symmetrical over-expansion by surplus countries, and might thereby create pressures towards global deflation. I also describe how Keynes differed in this view from Harry Dexter White, his US counterpart in the Washington negotiations, who feared an outcome in which the International Monetary Fund would be so expansive with liquidity that there would be a great post-war inflation, worldwide. In that article I claim that, during these discussions, Keynes' negotiating strategy in pursuit of a balanced global outcome was underpinned by a significant theoretical understanding of what was going on. In particular I maintain that (a) Keynes took from his *Treatise* something akin to an IS–LM–BP model (without the flaw in the analysis of the *Treatise*, which had been fixed up by the invention of the multiplier and the publication of the *General Theory*), and (b) Keynes, as he negotiated, was using something akin to a two-country version of that model to understand what was being

discussed. These two claims of mine are vital for a proper understanding of the work that Meade did at the LSE on international economics, which I discuss below.

I will be brief about Meade's third activity while he was in the Economic Section during the war, although it was important. Meade's paper 'Internal Measures for the Prevention of General Unemployment', dated 8 July 1941, reached the Inter-Departmental Committee on Post-War Internal Economic Problems in November, and as Skidelsky (2000, p. 270) says 'never quite lost its place as front-runner in the development of post-war employment policy'. This was, in effect, the first draft of what finally became the Full Employment White Paper, published as an official paper with the title of *Employment Policy* (Minister of Reconstruction, 1944), which laid the basis for a transformed macroeconomic management within the United Kingdom after the war. In the drafting of this document, there were long discussions between Meade and Keynes on the possibility and desirability of automatic fiscal fine-tuning (see Keynes, 1971–88, vol. 27, pp. 207–19 and 308–79; Wilson, 1982). Meade advocated countercyclical variations in social security contributions; this proposal featured in the final White Paper and was endorsed by Keynes. That idea would remain more or less an article of faith for Meade, and underpinned his work in inflation targeting which I describe in Section 5.

3. The LSE, 1947–58: international economics

Meade became Professor of Commerce (with special reference to international trade) at the LSE in 1947, where he was to stay for ten years, and where his great work on international economics was done.

It had been Meade's intention to begin his time back at a university by rewriting his textbook *Economic Analysis and Policy*. But this was not to happen. Someone once observed to me how different the teaching of our subject might have been if Meade had actually rewritten his book, rather than leaving the field open for Samuelson's great *Principles* book (Samuelson, 1948), which was not published until 12 years after Meade's book had first appeared. In his Nobel Prize autobiography Meade (1977a) explained why this did not happen.

I realised that it might be necessary to [rewrite the book] in more than one volume. So, as I was appointed at the LSE to teach international economics, I

started on *The Theory of International Economic Policy*. It grew into my two books, *The Balance of Payments*, and *Trade and Welfare*, with their two mathematical appendices.... These books took up practically the whole of my ten years at the LSE; but even so they did not cover the whole of the international problem.... My original project was over-ambitious; but the part which I did manage to cover was sufficient, eventually, to gain for me the Nobel award. (Meade, 1977a.)

It is characteristic of Meade's modesty that he should describe the work for which he received the Nobel Prize as an attempt to rewrite a textbook.

The balance of payments

In his introduction to the *The Balance of Payments* (Meade, 1951–5), he had, equally modestly, described it as a book which 'does not claim to make any significant contribution of original work in the fundamentals of pure economic analysis' (p. vii). This is something which turns out not to be true.

Meade also said of his book that it is one which has an 'indebtedness to the ideas of Lord Keynes [which] is too obvious to need any emphasis' (p. ix). Many people have said to me that they think that this remark is there because the book contains lots of 'multiplier Keynesianism', of a kind derived from the *General Theory*, which was still new and exciting in the 1950s. If that reading is correct, the generous acknowledgement of Keynes's contributions would not be particularly significant. But I believe the remark meant something rather different and rather more interesting. On more than one occasion Meade said to me that all he had done in this book was to write down what he learned from his work with Keynes during the war, about how to understand the international position of the British economy, and about how the world economy should be managed. That is a much more thought-provoking connection to acknowledge. (He did also admit that he had added quite a lot of algebra in the appendix.)

Volume I of the *Theory of International Economic Policy* (Meade, 1951–5) was entitled *The Balance of Payments*. There were three new features of this book. First, at the level of technical analysis, it integrated income effects and price effects so as to study the balance of payments in a general-equilibrium framework. In doing so, it extended the theory of the balance of payments beyond its traditional identification

with the current account to so as to consider the overall balance by including international capital movements. Second, it had a policy orientation, focusing on two instruments (exchange rate adjustment and domestic demand management) and two targets (internal balance – that is, full employment – and external balance – that is, a satisfactory overall balance of payments position). Third, Meade carried out his tasks in this book using a two-country model rather than merely developing the analysis for a single open economy.

At the level of technical analysis, investigations of the effects of exchange rate change had previously been separated from investigations of Keynesian income–expenditure theory. The former was normally based on the assumption of constant incomes, and carried out in terms of Marshallian partial equilibrium concepts, using the elasticities approach. (For a few key exceptions, see Robinson, 1937; Harrod, 1933; Laursen and Metzler, 1950; and Harberger 1950.) The latter was normally carried out using fixprice models, which led to the ‘absorption’ approach to the balance of payments, published by Alexander in the same year as Meade’s book (Alexander, 1952). The formal integration of the elasticities approach and the absorption approach to balance-of-payments theory, which Meade achieved, was very important.

At the level of the theory of economic policy, Meade’s basic idea – that, if internal and external balance are to be attained simultaneously, then two policy instruments are needed (exchange rate adjustment and the management of domestic demand) – was not a new one to him. He would have been familiar with this idea from his work with Keynes at the beginning of the war on Keynes’ book *How to Pay for the War*, and also from his work with Keynes on Britain’s financial crisis at the end of the war. (See Vines, 2003, for a detailed discussion of this claim.) Furthermore, as noted at the beginning of this article, many of the necessary components of this idea are already to be found in the *Treatise*, published more than 20 years earlier; and many of them are also to be found in *Economic Analysis and Policy*, published 15 years earlier, and in the work of Robinson and Harrod referred to above.

Indeed, this idea now seems deeply obvious to all of us. But that is only because we know the Swan diagram, which collapses all of the complex analysis by Meade into just one diagram (Swan, 1963), just like Hicks had done with the IS–LM system. At the time, Meade’s idea was absolutely revolutionary. In reminding ourselves of this fact, we should not forget that Tinbergen was awarded the Nobel

Prize in 1969 for stating a more general, but equally obvious, idea – that to achieve n targets simultaneously one (normally) needs n instruments. (Tinbergen’s analysis was developed simultaneously to, and independently of, Meade’s book.) And it took a *very* long time for Meade’s idea to be learned. For many years after the Second World War in the UK, full employment policies appear to have been carried out without sufficient regard for their effects on the balance of payments, and they often needed to be reversed at times of balance-of-payments crisis. Also, to take another example, many policymakers still continue to forget that if a devaluation is to improve a current-account deficit then it must be accompanied by a reduction in domestic absorption relative to domestic output, so as to release the resources needed to improve the trade account.

All of what I have said so far is about open-economy macroeconomics. We should also notice the third important feature of Meade’s book which I have mentioned above – that it develops everything for a two-country world, and discusses *global* macroeconomics, not just *open-economy* macroeconomics. You might think that this would be the obvious way to proceed. After all, any treatment of *trade* theory is normally done this way, by analysing trade in a two-country world, and this is what Meade himself would do in Volume II of the *Theory of International Economic Policy*, published a few years later. Furthermore, all of us have now lived through the 1980s, in which we studied the effects of Reaganomics on Europe, something which clearly required a *two*-country model. (We are all at present trying to understand the interrelationships between the United States, East Asia and Europe, which seems to need a *three*-country model.) But nobody had ever done global macroeconomics before Meade wrote his book. As I note in Vines (2003), even Keynes, when writing down of the key components of the necessary theory in the *Treatise* in 1930, wrote about nearly everything for a single open economy rather than for a global system. But in Vines (2003) I also develop the argument, described at the end of Section 2 above, that Keynes worked out, informally, aspects of the needed two-country model when he was negotiating with Harry Dexter White about the establishment of the IMF. It is my belief that Meade had seen, when working on these negotiations with Keynes, that such a model was necessary for a systemic discussion of global, policy-related, questions. This is my view of why he set out his analysis in this way, even although doing this made his book *much* harder to read.

Harry Johnson made two important criticisms of Meade’s book at the level of

technical analysis. The first, developed in Johnson's long review of the book (Johnson, 1951), concerned the treatment of saving in the model. Meade assumes that the amount of real saving coming from a given real income is independent of the terms of trade. Laursen and Metzler (1950) and Harberger (1950) had already shown how to avoid this mistake; many practitioners of open economy macroeconomics still forget how hard it is to defend what Meade assumes.

Johnson's second criticism, made in the paper which Johnson published at the time the Meade received the Nobel Prize (Johnson, 1978), leads in a valuable direction. What Johnson said was that Meade did not succeed in fully integrating real and monetary theory in his book. What he meant by this is that Meade assumed a flexible money supply policy designed to maintain a given exogenous rate of interest, with monetary policy changes being expressed in terms of (exogenous) interest rate changes. In the IS–LM–BP model subsequently developed by Fleming (1962) and Mundell (1962), the interest rate instead becomes endogenous, so as to ensure that the economy lies on a given LM curve. Under fixed exchange rates, the LM curve moves around because of the endogeneity of the money supply, unless monetary sterilization is possible, in a way which was analysed in the monetary theory of the balance of payments (which led to fame for Harry Johnson). Under floating exchange rates the money supply is held constant, and the interest rate and the exchange rate together become jointly endogenous, along with output. It seems odd that Meade did not think to make the interest rate endogenous by introducing an LM curve into his model, since this is exactly what he had done, more than 15 years earlier, when he had explained Keynes's *General Theory* to the world. Had Meade done this, surely he would have instantly invented the Fleming–Mundell model. My suggestion of the reason why that didn't happen is related to my view, stated earlier, that Meade never really believed in the LM curve. In his subsequent work, which I discuss below, work that was contemporaneous with that of John Taylor, Meade allowed for the endogeneity of the interest rate without having to make the ridiculous assumption of a fixed money supply – essentially by supposing that the interest rate would follow something like a Taylor rule. One can easily build a Fleming–Mundell-like model with a Taylor rule in it, instead of an LM curve. I believe that, although Meade did not like the way that the interest rate was made endogenous in the LM curve, at the time he was writing *The Balance of Payments* he could not yet see how to replace the LM curve by a policy–behaviour relationship like the Taylor rule. This is why, I think, it

was not possible for him to take the next step and construct something akin to the Fleming–Mundell model.

Trade and welfare

The second volume of the *Theory of International Economic Policy* was titled *Trade and Welfare*. In this, Meade presented a systematic analysis of neoclassical trade theory, essentially the theory of Heckscher and Ohlin, with the latter of whom he shared the Nobel Prize. But he combined this with an analysis of trade in factors – both capital and labour. He discusses policy in this book – the issue of protection versus free trade – but in relation to the movement of *both* goods and factors of production. Meade’s inclusion of international factor movements, in the main corpus of his theory of international trade, was innovative, and chimed with growing concerns, at the time, and since, about the ‘brain drain’, foreign direct investment, and the multinational corporation. Surprisingly, very few expositors of trade theory have followed Meade in explaining trade theory in this way, so that these subjects are more normally studied in isolation. Perhaps, again, it is because Meade’s integrated analysis makes for such difficult reading.

The book made a number of important innovations at the level of technical analysis, whose influence in economic theory went far beyond the study of international phenomena.

First, Meade introduced a new method for measuring small changes in welfare, which was a generalization of Marshallian consumer surplus, with its attendant limitations. And he then went on to present a whole new approach to welfare economics, defining overall welfare as an appropriately weighted sum of individual welfares. Johnson (1978) describes it as a brilliant feat of imagination for Meade to see that he could take over this approach from Fleming (1951) and then rework it into a powerful general technique for welfare analysis of practical policy problems. Doing this enabled Meade to escape from the nihilism of the new welfare economics, which worked in terms of ‘potential welfare’ and the ‘compensation principles’, but which made it difficult to say anything practical at all about the welfare effects of economic policy changes. Nearly all of us now do welfare economics in the manner pioneered by Meade.

Second, Meade invented the theory of domestic distortions in order to show

that a move towards free trade may not be welfare-improving if there are already distortions elsewhere in the economy. This idea was later carried forward by Bhagwati and Ramaswami (1963) and Johnson (1965). Meade invented the theory of the second best in his discussion of these ideas (inventing the technical term ‘second best’ as he did so), and explored many of its implications. As Corden (1996a) says, it is hard to see how something which now seems so obvious needed to be invented. Jacob Viner, in a book on customs unions (Viner, 1950), had already established the distinction between trade creation and trade diversion in the creation of free trade areas. This also seems totally obvious to us now, but it really only became obvious after Meade published the *Theory of Customs Unions* (1955b), which clarified and extended Viner’s distinction, and located it within his general theory of the second best.

Finally, it is important to add that the *Trade and Economic Welfare* includes a discussion of the meaning of optimum population and of optimum savings and of the relationship between these two concepts. This discussion, too, broke new ground.

Phillips

While at the LSE, Meade also did something else which was stunningly important: he brought Bill Phillips into economics. Meade once said to me that Phillips was the closest to genius of anyone that he had ever known. Phillips’s really important work in economics was on the use of control theory for macroeconomic stabilization purposes, rather than in estimating the ‘Phillips curve’ (for which he is so famous, but which he did in a rush in a few weeks, just before leaving London go on sabbatical leave).

Phillips had trained before the war as an electrical engineer (having previously left school without any formal qualifications), and immediately after the war he had graduated from the LSE with a third-class honours degree in sociology. One day, soon after receiving this unremarkable qualification, Phillips explained to Meade that he wished to build a strange ‘water-machine’ model of a macroeconomic system. Meade listened patiently because ‘the pipes seemed to have the right labels’, and so encouraged Phillips to build the machine, offering Phillips the inducement that he could demonstrate it at Lionel Robbins’s prestigious seminar for graduate students. The machine was duly built, and it is described in Phillips (1950). A brilliant

performance followed at the Robbins seminar, in front of most of the London economics professoriat, who had got word of what was coming. In the course of that seminar, said Meade, Phillips gave the best exposition that anyone present had ever heard of the Keynes-versus-Robertson debate, about whether the rate of interest was determined by liquidity preference or by the supply of, and demand for, loanable funds. This, said Phillips, was an argument about stocks versus flows; he then illustrated his claim by displaying the effects of water sitting in tanks, on the one hand, and water flowing through pipes, on the other. Phillips was duly instructed to write up his machine in a Ph.D. thesis, and John Hicks, who was by then Drummond Professor of Political Economy in Oxford, was asked to examine the thesis so as to ensure that somebody with a third-class degree in sociology could be given a Ph.D. in economics with a clear conscience. Phillips was then promptly brought on to the staff, and became one of the professors in the department within a few years. In Vines (1996) I give a detailed account of how the Phillips machine works. In particular I describe the stock–flow intuition which it provides, which is almost impossible to obtain any other way than by looking at this machine in action, and which certainly cannot be obtained from modern computer simulation models. As I describe below, Meade was closely involved with the use of the machine.

Work on his machine led Phillips to write his classic article on the use of control theory to help stabilize an economy (Phillips, 1954). This paper argued that a feedback policy can have destabilizing effects if the instrument of policy responds too strongly to a disturbance to the target of policy, and there is a lag in the effect of the instrument on the target. In a subsequent paper, Phillips concluded on a cautious note: ‘the problem of economic stabilisation is, even in principle, a very intricate one, and ... a much more thorough investigation of both theoretical principles and empirical relationships would be needed before detailed policy recommendations could be justified’ (Phillips, 1957, p. 275). Meade was involved with the preparation of both of these papers, and he agreed with their conclusions.

Milton Friedman came to hold similar views on the potentially destabilizing effects of macroeconomic policy, at a very similar time (Friedman, 1953). He went on to declare that active macroeconomic policymaking is too difficult to do properly and, worse still, too dangerous. Friedman’s response to this problem was to set off in pursuit of his holy grail: a non-interventionist macroeconomic policy.

Meade's and Phillips's response to this problem was rather different. Phillips thought that it would be possible to do good macroeconomic policy, but only if the policy was carefully designed. Indeed he ended his 1957 paper on an optimistic note. He called for the use of multivariable control methods, to regulate multiple objectives in an economy in the face of multiple disturbances, and he noted that methods for doing this were just, in the late 1950s, becoming available. He also called for the econometric estimation of the parameters of the econometric model which would be necessary for the study of such regulation. Meade said to me on more than one occasion that he regarded his own last big project, carried out more than 20 years later, and described in Section 5 below, as a response to Phillips's call to action.

Other activities

At the LSE Meade acquired a further generation of very able young disciples, drawn from many countries, who included Max Corden, Richard Lipsey, Robert Mundell and Harry Johnson, the last of these 'at one remove' (Johnson, 1978, p. 66). Meade had persuaded Phillips to build two of his water machines, joined together by an ingenious model of a foreign-exchange market. Peter Kenen (now retired from Princeton) vividly remembers a graduate student seminar in which he was asked to run fiscal and monetary policy for the United States on one of these machines. At the same time on the other machine Richard Cooper (now retired from Harvard) was required to run fiscal and monetary policy for Europe. They made the world develop unstable cycles – and spilt a lot of water (Vines, 1996). By such means did that generation of students learn about the need for an international coordination of macroeconomic policies, 25 years before the subject became fashionable.

During this time Meade also went on sabbatical leave to Australia. With Eric Russell of Adelaide he wrote a short theoretical analysis of the effects of the Korean War boom on the Australian economy, via its effects in raising the world price of wool, which was – at that time – a major export commodity for Australia (Meade and Russell, 1957). This article is one of the most profound pieces ever written about that economy. (Harcourt, 1982, ch. 21, describes how it came to be written: Meade became the expositor of Russell's perceptions, which then existed only in note form.) The authors first explain the 'Stolper–Samuelson' theorem concerning the effects of protection on income distribution. Their exposition is different from the one given by Stolper and Samuelson, and much more like that to be found in the original source of

that theorem – the Brigden Report of 1929 on the Australia tariff (Brigden et al., 1929). This is because it discusses the effects of protection on income distribution in an Australian ‘dependent-economy’ model, in which there are non-traded goods as well as traded goods. (See Vines, 1994.) Meade and Russell then use this model to examine what has subsequently become called the ‘Dutch disease problem’. They show how an export boom can, by raising wages, give rise to cost pressures for the protected sector, which can cause it to contract, even at a time of general boom. Their paper directly influenced the subsequent discussion of this problem, first in Australia in the 1970s (see Gregory, 1976), and then worldwide in the 1980s (see Corden, 1984). This ‘problem’ has returned in a big way in the early 21st century, with the high prices of primary commodities, worldwide.

4. Cambridge, 1957–69: growth theory

Meade became Professor of Political Economy at Cambridge in 1957, when he succeeded his teacher, Dennis Robertson. When Meade moved to Cambridge, growth theory was in the air. His useful book, *A Neo-Classical Theory of Economic Growth* (1961b), ‘brings the subject within the range of the undergraduate student, covers a number of aspects (such as the presence of the fixed factor land) usually omitted in more high powered mathematical treatments, and presents in detail the mathematics of a two-sector growth model’ (Johnson, 1978, p. 79). He also made advanced contributions to growth theory (1965, with Frank Hahn, and 1966). But his lasting contribution in this area is his essay *Efficiency, Equality, and the Ownership of Property* (1964). This ‘provides a very suggestive account of the forces underlying the accumulation of capital and the relationship between earned and unearned income’ and ‘stimulated much of the revival of interest in this subject, at least in the United Kingdom’ (Corden and Atkinson, 1979, p. 530). Meade regarded this as, in many ways, his best book, because it puts together into a single synoptic framework his views on economic growth, on the microeconomic role of the price mechanism, on the size and the genetic composition of the population, and on the distributional implications of property ownership. He analysed further the interplay of these last factors in his Keynes Lecture on ‘The Inheritance of Inequalities: Some Biological, Demographic, Social, and Economic Factors’ (Meade, 1973c).

In 1960 Meade visited Mauritius and contributed to a report to the Governor,

applying for the first time his ideas on growth theory and on population policy to the problems of a less developed country (Meade 1961a). His prediction for Mauritius of Malthusian stagnation turned out to be spectacularly wrong, in interesting ways.

In 1973 Meade also began in Cambridge a grand scheme of work entitled *The Principles of Political Economy*. The purpose of this series of books was ‘to bring the best of modern theory within the range of an intelligent and educated adult, the volumes being intended to tackle successively departures from the assumptions of a model of perfect static general equilibrium’ (Johnson, 1978, p. 79).

5. Retirement, 1969–95.

In 1969 Meade took early retirement, five years before the statutory retiring age. As Atkinson and Weale (2000) say, ‘[a]ways the most gentle and courteous of men, he had found extremely depressing the quarrels between those labelled “post Keynesian” and those in the Faculty who researched the mainstream of Economics’. But he did not stop working; indeed the next quarter century was to be one of his most productive.

Meade initially worked on the *Principles of Political Economy* but subsequently, perhaps sensing that this enterprise did not provide the best outlet for his unflagging energy, he turned to other schemes. The *Intelligent Radical’s Guide to Economic Policy* (1975a) had ‘wide influence in Britain, particularly on debates about economic planning’ (Corden, and Atkinson, 1979, p. 530). In it Meade returned to a theme set forth in his *Planning and the Price Mechanism* (1948a) which I summarize in my concluding section below.

An expenditure tax

Meade’s first big activity in retirement was to chair a committee which was established by the Institute of Fiscal Studies, to look into the structure of the UK tax system and to advise on how it might be simplified. The report, entitled *The Structure and Reform of Direct Taxation* (1978a), is a monumental study of British personal taxation. As Atkinson and Weale (2000) say,

The Committee observed that the tax system at the time was a mixture of taxes on income and taxes on expenditure, and concluded that it should be more desirable that tax should be levied on one or the other, all but one of the

Committee favouring a shift towards an expenditure tax. In the 20 years since the report was written, exemptions for saving have appeared in the form of TESSAs, PEPs and ISAs, and the shift to indirect taxation has been a move towards a tax on expenditure. In this respect, the Report was influential, but its lasting value lies in the outstandingly high quality of the analysis.

Meade was fortunate in having as assistants for that committee three additional able young scholars, John Flemming, John Kay and Mervyn King, who all subsequently achieved distinction in various aspects of public life.

A return to the theory of macroeconomic policy

In 1977 Meade returned to the great questions of national macroeconomic management, at the age of 70 when most people might have felt ready for a holiday. His work began with his Nobel Prize lecture entitled ‘The Meaning of Internal Balance’ (Meade, 1978b). It has been explained above how, in the *Balance of Payments* (1951) – one of the volumes for which Meade received the prize – he talked about the problems of reconciling internal balance (full employment) with external balance (a satisfactory overall balance of payments position). In his Nobel Prize lecture, Meade returned to question this framework, arguing that the concept of ‘internal balance can now no longer be taken merely to refer to the achievement of full employment, but must also make reference to the achievement of low and stable inflation’ (Meade, 1978b). He argued that it is not sufficient to rely on incomes policy, of the conventional kind which was still fashionable in Britain. The fundamental problem is that a commitment to ‘full employment’ removes the threat of unemployment as a response to over-rapid wage increases, and it is on this threat which wage and price stability in part depends. As a result, Meade argued that Keynesian policies should be ‘stood on their head’. Demand management policy should be responsible for the maintenance of a slow and restrained rate of growth of money incomes, so as to put a ‘lid’ upon inflationary pressures. Incomes policy, or, more generally, the ‘reform of wage-fixing’, should be used – he argued – not to hold down prices but to promote employment.

This lecture contained three striking claims.

First, Meade’s assertion that demand management would, inevitably, be excessively expansionary and would thereby promote inflation was essentially the

same claim as that made the following year by Kydland and Prescott (1978) – a claim which went on to help them, too, to win the Nobel Prize. Meade’s claim was made five years before the macroeconomic implications of the Kydland and Prescott idea were properly worked out by Barro and Gordon (1983).

Second, Meade’s claim that macroeconomic policy should be confined to ‘putting a lid on inflation’ implied that employment would no longer be determined by a macroeconomic policy which was promoting full employment. As a result the levels of employment and of unemployment would be determined in some other way. At any point in time, said Meade, the ‘reform of wage fixing’ could be taken as given, and that would determine what we would now call the non-accelerating inflation rate of unemployment, or NAIRU. Meade then said that unemployment would gravitate towards the NAIRU, using the following argument. If unemployment was lower than the NAIRU, then inflation would be rising. But if the rate of growth of money incomes was effectively controlled by policy, then this would mean that policy would need to ensure that output fell, so as to prevent the growth of money incomes from rising above target. That would cause unemployment to rise towards the NAIRU, which would – in turn – stop inflation from rising. Meade used a similar argument to describe what would happen if unemployment was above the NAIRU. This line of reasoning effectively made Meade a follower of Friedman, who had claimed, in his fundamental paper published ten years earlier, that macroeconomic policy could not itself control the level of unemployment (Friedman, 1968). Friedman’s idea had been publicly broadcast in Great Britain, by Prime Minister Callaghan, in a famous speech given two years before Meade’s lecture. But at the time this idea was too revolutionary for most macroeconomists in Britain. It was still widely thought that only monetarists believed something like this; Bob Rowthorn had caused uproar amongst the Cambridge Keynesians by claiming something of this kind just a year before Meade gave his lecture (Rowthorn, 1977). Meade’s lecture had the effect of detaching such a claim from its monetarist proponents, and began the process of making this claim mainstream in Britain, something which was eventually achieved by Layard, Nickell and Jackman (1991).

Third, Meade discussed how, exactly, demand management policy (that is, fiscal and monetary policy) should be used to achieve the required slow and restrained growth of money incomes. His answer was that this should be done mainly by fine-tuned changes in tax rates, which, as mentioned above, he had discussed in

Consumers' Credit and Employment (1938) and as he had suggested in his draft of the Full Employment White Paper in 1944. This answer made him very *unlike* Milton Friedman. In a subsequent mischievous talk to the Royal Economic Society, Meade (1981) created a taxonomy, so as to compare his new proposals with orthodox Keynesianism on the one hand and monetarism on the other. His mischief was to make the monetarists end up on the far left of his taxonomy, and to make the 'old-fashioned' Keynesians end up on the far right.

Meade presented a draft of this Nobel Prize lecture to the Marshall Society – Cambridge's student economics society. I was a research student in Cambridge at the time. As I recall, we did not know that Meade had just been awarded the Nobel Prize, or that what we were hearing was a dry run for his lecture in Stockholm. His lecture was a bit too un-Keynesian, for me, and I stood up and said so. Meade defended his claims to the (large) audience, using the argument that policy works well when each policymaker is given an objective which he is likely to be able to achieve – and that macroeconomic policymakers would be able to achieve a nominal income target, but would not be able to achieve an excessively optimistic employment target. (This was, again, a very Barro–Gordon-like answer.) But I had, by that time, read the papers by Phillips referred to above. So I stood up again and – rather bravely – said that, although this might be true, I thought that if his system was set up as a set of differential equations it would probably be unstable.

This question was to set in train a large research programme in the Department of Applied Economics in Cambridge. I had never met Meade before this lecture, but within a week he had asked me to work with him, and he then gradually gathered a large team to work with us, which included Andy Blake, Nicos Christodoulakis, Martin Weale and Peter Westaway, and also brought the control engineer Jan Maciejowski into the group. The resulting activity led to four substantial books (Meade, 1982; Meade et al., 1983a; Meade, 1986a; and Meade et al., 1989) and also to a number of tracts and articles in both technical and popular journals. Two main strands emerged in this work; we can describe these as being about inflation targeting and about supply-side reforms.

Inflation targeting

The second and fourth of the books just described set out Meade's proposed policy regime, in which there would be a target for nominal GDP, to be controlled primarily

by means of changes in taxes. In Meade et al. (1983a) it was shown, using an estimated econometric model of the economy, that fine-tuned feedback rules for taxes really could be found which would keep nominal income close to a target path. The work used the multivariable control methods which Phillips (1957) had predicted would become available, which were supplied to the group by Jan Maciejowski.

This work culminated in Meade et al. (1989), called *Macroeconomic Policy: Inflation, Wealth and the Exchange Rate*. As a central part of the work for this book, Martin Weale oversaw the construction of an original empirical macroeconomic model, which developed the model being used at the National Institute of Economics Research in London at the time. It contained a number of rational-expectations features, which, at that time, were highly innovative. In particular, in the model investment was driven by Tobin's q (that is, by the value of the stock market), which, following earlier work by Blanchard, was forward-looking, and which jumped in response to the expected future level of the interest rate (in exactly the same way as the exchange rate jumps in the Dornbusch model). And the model contained a forward-looking consumption function, with consumption partly depending on expected future income and thus on the expected future level of taxes. This is now all rather familiar, but was ground-breaking at the time, although some of the underlying ideas had already been explained by Meade himself, nearly 20 years earlier, in *The Growing Economy* (Meade, 1968).

Meade's policies were tried out on this model, using taxes as the policy instrument (and also the interest rate, for reasons explained below). This required the application of feedback control to a forward-looking model. That was necessary, given the rational-expectations features in the model, which made consumption and investment at any point in time depend on the expected level of taxes and the interest rate in the future, as has been explained above. The new ideas necessary for this work were developed jointly by the group in Cambridge, by a group in London led by David Currie and Paul Levine, and by Marcus Miller and Willem Buiter in Warwick and Bristol. The central idea driving that work on control methods was that rule-bound policies are necessary to guide an economy, if the world is forward-looking, since what economic agents do now depends on what they expect policy to do in the future. Such ideas were largely put on one side in the early to mid-1990s, when inflation-target regimes were first analysed theoretically, using simple backward-looking models (see, for example, Bean, 1998.) But many of them have re-emerged in

more recent technical work on targeting inflation in forward-looking, dynamic economies. For example, the idea of ‘stabilization bias’, which was understood very clearly by this group of people in England in the mid-1980s, was rediscovered and made popular by Michael Woodford nearly 15 years later, in the late 1990s.

Meade’s young colleagues came to experience his skill at running a group of researchers – which I have begun to think he partly inherited from his experience in the Cambridge Circus so many years previously. As he passed 80 years of age, Meade presided over a weekly programme of meetings, at which his research group discussed the rational-expectations developments which I have described above. The day after each meeting, Meade would sit at home, in his village outside Cambridge, and write down an algebraic formulation of what we had all discussed. He would then walk to his local post office and send us a letter containing a photocopy of these handwritten notes. We would all then analyse his algebra and diagrams, in preparation for the next week’s meeting.

It is fair to say that the policy proposals, which Meade’s group developed, have not withstood the test of time. There are two explanations for this.

First, we now target the rate of inflation, not nominal incomes; Meade’s nominal-income target regime was, effectively, only a precursor to the inflation-target regime which is now in place in the UK. Meade proposed a nominal income target, in part, because it was inherently more flexible than a *rigid* inflation target. It did not require that the inflation rate be exactly pinned down to an exactly pre-announced rate, but instead allowed, as explained above, for a (temporary) increase in inflation to be met by a (temporary) reduction in output, so as to ensure – on balance – that there would be no change in the rate of growth of nominal incomes. We now know that a *flexible* inflation-target regime is better than such a nominal-income target regime. But it took some years of research for us to understand just why this is so, work which is described, for example, in Hall and Mankiw (1993), Leiderman and Svensson (1995), and Woodford, (2003). We have realized that the chief disadvantage of a nominal income target is that it does not ‘let bygones be bygones’: it requires that any overshoot which has occurred in the *level* of prices be clawed back, by means of a recession and lower subsequent inflation. But – at the same time – we have also realized that significant institutional development is required if one is to move from a purely rule-based system, like a nominal-income-target regime, to something like a rule-based but flexible inflation-target regime. To do this requires that the

macroeconomic policymaking authorities be shielded from political influences which might force them to use their flexibility in an over-inflationary manner.

Second, we now use changes in interest rates, not changes in tax rates, in order to control inflation. We do this for three well-known reasons. First, it is easier to shield monetary policy from political influence than it is to do this for fiscal policy. Second the interest rate can be changed more regularly than taxes can be changed, and more quickly in response to new information – although fiscal procedures are less inflexible in some countries (such as the UK and New Zealand) than in others (such as the United States). Third, in an open economy monetary policy can have effects beyond those which can be caused by changes in taxes, because it can cause changes in a country's exchange rate which can, in turn, cause movements in exports and imports. This allows a country to externalize some of the costs of controlling shocks. That is a good idea if shocks in the world happen at different times in different countries.

Thus, as to both target and instrument, it appears that the world has moved on from Meade's proposals.

Nevertheless Meade's proposals had more general features, which *do* seem to have survived the test of time. Meade came to describe them as 'New Keynesian'. They were 'Keynesian' since, unlike Friedman, Meade continued to see the need for interventionist macroeconomic policies. (On this see Gordon, 1990.) They were 'new' because Meade proposed a target for a nominal variable (nominal income) instead of having a target for real output. And, in addition, they were proposals for rule-bound policies. It is hard to remember how unusual, and how original, it was to combine these three features, in the early 1990s.

These three features of Meade's proposals seem to have had a significant influence on the development of macroeconomic policymaking in the UK in the early 1990s. It is also hard to remember just what a mess macroeconomic policymaking was in Britain at that time. Following the country's brief flirtation with monetarism, it had joined the ill-fated 'exchange-rate mechanism' of the European Monetary System, which, in retrospect, appears to have been a pretty stupid policy framework. Following the UK's ejection from that system in September 1992, the Bank of England needed to quickly design a new policy regime. There was very little good theoretical guidance on what to do – other than Meade's. I say this, in particular, because the proposals of John Taylor, that monetary policy could follow a 'Taylor

rule', really emerged only two years later (Taylor, 1994). When the new regime was announced by the Bank, *within days*, it had Meade's three features – it was one in which interest rates would be actively used, in pursuit of a nominal variable (the inflation target), in a rule-bound (if flexible) manner. The outcome was one of the world's earliest inflation-targeting regimes (the British regime was second only to that established in New Zealand), a set-up which has developed into the world's best inflation-targeting system. I believe that *Macroeconomic Policy* (Meade et al., 1989) exerted some influence in the construction of this valuable new regime in Britain.

Furthermore, there are aspects of Meade's proposals which may yield further benefits in the future. *Macroeconomic Policy* suggests that policy should not just pursue a nominal anchor (taken to be a nominal income target in that book but it could just as well be an inflation target). The book also suggests that policy should pursue a target for the allocation of GDP between consumption and investment, so as to avoid 'selling off the family silver' (a phrase much discussed at the time), that is, so as to ensure that the supply side of the economy grows sufficiently rapidly. To do this, the book suggests that there should be rule-bound procedures for *two* policy instruments (both monetary policy – that is, interest-rate policy – and fiscal policy) in the joint pursuit of *two* targets (both the nominal anchor and the consumption–investment split). This was a very Meade-like suggestion in two ways: it synthesized a number of different ideas being discussed at the time, and it was characteristically complex and difficult to investigate (making this aspect of *Macroeconomic Policy* quite hard to understand).

One might argue that, in most circumstances, interest-rate policy can adequately control inflation, in the short to medium run, leaving fiscal policy to be more gradually adjusted so as to bring about any desired changes in the consumption–investment mix, in the longer term. This is, for example, how the current British macroeconomic policymaking framework operates. In such cases monetary policy and fiscal policy can be considered separately, and a complex analysis of two instruments in pursuit of two targets is positively unhelpful.

Nevertheless, practical experience – in the United States, Japan, Europe and Australia – has shown that there are circumstances in which fiscal policy may need to assist in the pursuit of the inflation target, particularly when there are large falls, or increases, in demand. (See Garnaut, 2005.) And recent theoretical work has shown that there may be more general advantages if fiscal and monetary policymakers can

rely on each other to act in appropriate ways. (See Allsopp and Vines, 2005). The problems which might arise if the monetary and fiscal authorities cannot do this, and act independently of each other, were examined in Meade's very last published journal article (Meade and Weale, 1995b). These problems have arisen very seriously in the Eurozone, where the European Central Bank and European governments do not cooperate, but not much, if at all, in the United Kingdom, for reasons examined theoretically in Kirsanova, Stehn and Vines (2005).

The reform of wage fixing

The second part of Meade's project considered measures to promote employment through the reform of wage fixing. These were described in Meade (1982; 1984a; 1986a; 1986b). Looking back, one can credit Meade with having helped to create a sea change in the 1980s in British discussion of how wages ought to be fixed. Gone entirely are the ideas of rigid, centralized policies to hold down wages and prices by centralized administration. In their stead are proposals for policies which reinforce market mechanisms and which have their major impact as employment-creating rather than price-controlling devices (Layard, 1986). Meade's own suggestions included proposals for arbitration, a wage inflation tax, and profit sharing.

On profit sharing and related topics Meade had already written a number of papers, starting in 1972 with 'The Theory of Labour Managed Firms and of Profit Sharing'; and his views on this subject also become influential in Britain. He was sympathetic to the ideas about workers' remuneration espoused in Weitzman's book *The Share Economy* (1984). But his criticisms of Weitzman were also important. Profit sharing *might* have beneficial effects for macroeconomic stability, through encouraging greater flexibility of workers' remuneration. But it *might also* do the opposite, if workers who concede profit sharing also come to exert an influence on the employment decisions of their firms, and use this influence to restrict employment opportunities and raise their own wages.

Meade went on working in this second area, long after the group of those working on demand management broke up after the publication of *Macroeconomic Policy* in the late 1980s. An important driving force in this work, and something which I have not discussed adequately in this article, was Meade's interest in the reform of the social security system. Such reform might make it possible to reconcile an efficient labour market – which might necessitate a pay-bargaining system that

delivered low wages to some people – with a distribution of income which was equitable and just.

The year 1995 saw the production of Meade's last book *Full Employment Regained* (Meade, 1995a), in which he attempted a synthesis of his ideas on demand management and on supply-side reforms, arguing that full employment was possible providing that the appropriate reforms were undertaken. This, as Atkinson and Weale (2000) say, brought his career full circle. That career began, and ended, with Meade being concerned about the waste of resources and misery generated by high levels of unemployment. The Institute of Fiscal Studies hosted a seminar at which the ideas in his book were discussed. This was his last public appearance. And it was a gathering of many of the people whom he had influenced throughout his long career.

6. Influence

There can be no doubt that the *Theory of International Economic Policy* had an enormous influence upon our discipline. Corden and Atkinson (1979) and Johnson (1978) pay eloquent tribute to this. What I have said above suggests that there are many other ways in which he has exerted considerable influence. However, it is true that Meade is not as visible as some others of his generation.

This is probably due to his difficult manner of writing. This meant that his books were not as widely read as they might have been. Immediately one must exempt from this blanket statement Meade's popular articles and semi-popular tracts, which were beautifully written, and which displayed Meade's classical training to great effect, at the same time as being very persuasive. However his form of exposition, when he was doing fundamental economic theory, was very different. His 'style of work and presentation consists in the development of a *general* mathematical model of a problem, followed by translation of analysis of the various possible cases into literary English illustrated at most by arithmetical examples or simple diagrams' (Johnson, 1978, p. 65; emphasis added). Johnson went on (p. 66) to complain about his 'taxonomic approach and dependence on rather inelegant personal mathematics'. This means, said Johnson, that 'students find it incredibly tedious to read his books and [find it] difficult to convince themselves that the effort is worthwhile in terms of the knowledge gained' (p. 65).

Corden and Atkinson made similar complaints, specifically about Meade's *Theory of International Economic Policy*, but by implication about his other work as

well:

... the ... model of *The Balance of Payments* was very influential and ... had a rapid impact on key writers and policy makers in the field. ... By contrast, the influence of *Trade and Welfare* was more delayed, and to a great extent many of its original ideas were rediscovered later ... Both books ... are written in a taxonomic and rather heavy style, with no footnote references to the literature and a failure to highlight the author's original contributions. Although the books are immensely rewarding to serious students, their messages often reach a wider audience only through the intermediation of more succinct, if less original, writers. (Corden and Atkinson, 1979, p. 530)

Elsewhere Corden and Atkinson talk of Meade's 'distinctive literary–arithmetical style', which now seems somewhat old fashioned compared with modern concise, simple algebraic expositions. Johnson (1978, p. 74) sums up the complaints, talking about the 'reader-repellent character of Meade's literary-arithmetical-cum-idiosyncratic-mathematical-appendix style of presentation'.

All this enables one to see why the spread of Meade's ideas had to rely, more than is usual, on his personal influence over his colleagues. It is easy to see how, in such circumstances, his influence could be underrated.

Yet one can easily see, too, why Meade deliberately chose to work in the way just described. It was his prodigious power to generalize – to see competing theories about any subject as part of a yet larger encompassing scheme of things – which caused him to create his vast architectural structures of taxonomy. These put off many readers. But, the structures having been created, a dedicated band of followers managed to climb up onto them, and then – when they came down again – to explain what they had seen to the rest of the profession. It was obviously easier to do this for those disciples and colleagues who had the good fortune to work directly with Meade, for they were able to discuss the insights of his work with him, as they worked through it. As will be clear, there were many such disciples and colleagues throughout Meade's long career. It is mainly through them, and thus mainly indirectly, that his influence spread so far.

Those who worked with Meade shared in his zest for life and in his acute sense of fun, some of which may be apparent to the reader of this account. They saw,

too, his respect for careful argument, and his pleasure in a slow and measured conversation, through which such argument can be developed. But, especially, Meade conveyed to them his sense of the underlying moral purpose of our discipline. It is appropriate to end this assessment of Meade's work by discussing his views on that subject.

7. Underlying philosophy

I mentioned in the introduction that Meade took up the study of economics because he wanted to help make the world a better place for ordinary men and women. In this he stood in the great Cambridge tradition of secular moralists, who might in the early Victorian age have become priests, but under the later influences of Darwinism and religious doubt turned instead to social improvement. The first volume of Skidelsky's biography of Keynes (Skidelsky, 1983) links Keynes back to Marshall and Sidgwick in that enterprise. Meade, in turn, emphasized this shared objective as 'the decisive factor in binding me so closely to [Keynes] ... he had ... a passionate desire to devise a better domestic and international society' (Meade, 1983b, p 268).

What is the conception of this better society that Meade strove for? And what is the role of the economist in helping to create it? The following few paragraphs, taken from a review article which he wrote in the late 1940s (Meade, 1948b, p. 34), summarize some of his key ideas with a deceptive simplicity.

Meade writes that one's overall purpose is that 'of combining freedom, efficiency and equity in social affairs ...'

Two points should, however, be emphasised. First, this does not beg the question of planning. There may well be occasions ... on which the State should rightly prepare general programmes for far-reaching structural changes in the use of the community's resources; and there may be sections of the economy (such as public investment) where the State should on all occasions plan ahead. But where planning takes place, it is still possible to use money and prices as a main, if not the main, instrument for getting the plan carried out.

Secondly, there is no suggestion that on those occasions in which money and prices have been extensively used in the past the arrangements have been

satisfactory. Far from it. In order that money and prices may fulfil their purpose three main conditions must be fulfilled. First, the total supply of monetary counters must be neither too great nor too small in relation to the total supply of goods and services to be purchased. Secondly, the total supply of monetary counters must be equitably distributed so that no one obtains more than a fair share of command over resources. Thirdly, no private person or body of persons must be allowed to remain in a sufficiently powerful position to rig the market for his own advantage.

These conditions have not been fulfilled in the past. On the contrary, considerable state planning and much state intervention is required to ensure that these conditions are fulfilled. If, however, we wish to combine freedom, efficiency and equity in our economic life, we should proceed to make arrangements to see that these fundamental conditions are satisfied; and as they are more and more nearly fulfilled we should make a progressively greater use of the monetary and pricing systems....

These 'fundamental conditions' have indeed been more nearly satisfied, in OECD countries, in the several decades since Meade wrote these words. But there is still much work to do. We still need to design intelligent monetary and pricing systems to deal with pressing global microeconomic problems (such as the threat of global warming, or the miserable health of the world poorest people), and with pressing global macroeconomic problems (such as large international imbalances, and the risks of financial crises in emerging market economies). It remains Meade's challenge to economists that we should develop policymaking institutions, and pricing systems, to deal with these problems, in ways which combine all of freedom, efficiency and equity, as much as possible.

David Vines

Selected works

This article is a development of my entry about Meade in the first edition of *The New Palgrave: A Dictionary of Economics* (Vines, 1987). That piece made use of two full-scale assessments of his work by Harry Johnson (1978) and by Corden and Atkinson

(1979), and also used the short account by Harcourt (1985). In writing this piece I have been helped by a number of full-scale assessments of Meade's work which have appeared since 1987, by Atkinson (1996), Atkinson and Weale (2000), and Howson (2000). I have also referred to shorter accounts in Solow (1987), Greenaway (1990), and Corden (1996a; 1996b). There is a bibliography of Meade's work attached to Johnson (1978), which was complete when it was assembled, except for 'a number of ephemeral newspaper articles and reviews'. From 1978 until his death in 1995, Meade continued to publish a remarkable amount, and a full bibliography is attached to Howson (2000). Accordingly, in the list below I include only those pieces of Meade's work to which I have referred explicitly, plus a few other particularly important pieces to which I do not refer. The bibliography, of course, includes all the pieces by other authors to which I make reference.

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