



MICHAEL JOHN ARTIS

Michael John Artis

1938–2016

MICHAEL ARTIS WAS BORN in Croydon on 29 June 1938 to Violet and Cyril, the name Artis reflecting Huguenot origins. He was never one for sitting on formality, and was known universally as ‘Mike’. The family later moved from London to Blackpool, where Mike was to acquire the northern accent which was to puzzle his colleagues at the European University Institute when he moved there later in his academic career.

It was in Blackpool in the early 1960s that Mike met Lilian Gregson, then a research assistant at the Blackpool Infirmary, and they married in 1961. Their first daughter, Rosamond, was born when Mike was at Adelaide University and she was one of more than six children born to faculty members there around that time. It was a very happy and lively period in their life with many social functions involving large numbers of children. Their second daughter, Hilary, was born after their return to the UK. In their early years at Swansea many Australian friends visited Mike and Lil, and enjoyed their hospitality. However, the marriage ended and they divorced in the mid-1970s.

While at Swansea, Mike fell in love with the Economics Departmental Secretary, Shirley Knight, and they married after Mike moved to Manchester. Shirley’s children, Mark and Jacqui, accompanied them to Manchester and Mike welcomed them and was a great help to them both. Mike had made many lifelong friends in Australia and they maintained their close relationships with Lilian, Ros and Hilary, while remaining in touch with Mike and his new family. Mike and Shirley later moved to Florence where they seemed especially happy. Four years after returning

to Manchester Mike became very ill, and Shirley was a strong support, as were his daughters.

Mike was what would be described as a ‘bright spark’. He shone at school in Blackpool, winning a place at the top local grammar school (Baines Grammar School). From there, Mike gained a scholarship to Magdalen College, Oxford, to read PPE from 1959 to 1961. His tutor at Magdalen was David Worswick, whom Mike held in great affection and respect.

The Oxford Institute of Statistics

On graduation, he was encouraged to join the Oxford Institute of Statistics, and his ability was recognised by Tommy Balogh (later Lord Balogh). It was under Balogh’s supervision that he began work on his first book and published his first journal article in 1961.

First journal article

In this first journal article, ‘Liquidity and the attack on quantity theory’, in *The Bulletin of the Oxford University Institute of Statistics* (Artis, 1961), he tackled an issue in monetary economics relating to the 1959 Report of the Committee on the Working of the Monetary System (the ‘Radcliffe Report’). Although that committee included two academic economists, Professors Cairncross and Sayers, its conceptual basis was largely hidden from sight, with no equations or formal analysis. Mike’s article, in our view the best commentary on Radcliffe, provided an interpretation of its underlying framework, effectively delineating the issues for an academic audience; it was appropriately reprinted in the volume on *Readings in British Monetary Economics* (Johnson, 1972).

The Radcliffe Committee’s major conclusion was that money did not matter in economic policy. If the government sought to control its quantity, substitutes would emerge so rapidly that any attempt at control would prove pointless. This seemed to run directly counter to Milton Friedman’s contemporaneous claim that ‘inflation is always and everywhere a monetary phenomenon’.

In the UK the Radcliffe Committee’s assessment met with a mixed response. Economists, such as Victor Morgan, insisted that a fundamental difference exists between money and other financial assets and were highly critical of the Report’s emphasis on liquidity as the appropriate focus of

policy. To them, the money supply seemed more readily quantifiable and less amorphous than what the Report called the 'state of liquidity', a term which seemingly embraced confidence, incentives and attitudes incapable of precise measurement.

It is on this point that Mike entered the scene. He drew attention to three main features. First, when considering the quantity theory of money one should distinguish between what he called the 'naïve' and 'sophisticated' quantity theory. Second, he then took the analysis further by drawing on American analysis of money substitution. Third, he built on that analysis to provide a different interpretation of liquidity and money in terms of the quantity theory.

As he noted, 'the Committee was in no doubt that variations in money supply could be offset, in their effect on price levels, by variations in the velocity of circulation, adding moreover, that "we ... cannot find any reason for supposing ... that there is any limit to the velocity of circulation"' (para. 391)' (Artis, 1961, 345). To make sense of this (arguably extreme) position, it is necessary to consider the 'sophisticated quantity theory', as Mike called it, and his interpretation of the Radcliffe Committee's attack on it.

In his article, he argues that the Committee's emphasis on the 'whole liquidity position' paralleled US research on the impact of non-bank financial intermediaries in monetary policy by Gurley and Shaw (1956, 1960). In terms of the standard Keynesian model, the growth of non-bank financial intermediaries is analytically equivalent to an improvement in bond liquidity (Patinkin, 1961), which makes bonds a better substitute for money, causing the demand curve for money both to shift leftwards and become more interest elastic.

The scenario proposed by Mike Artis, as a rationale for the Radcliffe position, was that the shifts in the demand for money due to the emergence of non-bank intermediaries were not autonomous, accidental events, but were in fact institutional developments induced by monetary tightening, a potentially greater challenge to the quantity theory of money.

This illustrates a hallmark of Mike's career, a (then young) scholar combining in a measured way a variety of explanatory approaches and interpretations within an encompassing conceptual framework. In this case, it is perhaps ironic that, despite the Radcliffe Committee's emphasis on 'liquidity', the analytical framework employed was that of the quantity theory and the demand and supply of 'money'.

His first book

A second article appeared two years later, on 'Hire purchase financial houses' (Artis, 1963a). Following the Radcliffe Report there was interest in sources of 'liquidity' outside the banking system, and this led directly to a discussion of such non-bank intermediaries in Mike's first book, *Foundations of British Monetary Policy* (Artis, 1965).

Foundations was concerned not with monetary policy but with the development of those fundamental and institutional relationships underlying the authority and ability of the Bank of England to initiate and implement monetary policy. While these institutional factors take many forms and are continually changing, the analysis was centred on three 'basic' arrangements, these being the Bank's relationship with the apparatus of government, its own internal organisation and its relationship to the financial system. In the last case, Mike observed that the Bank's control of the financial system rested heavily on informal persuasion, rather than upon statutory provisions.

While the book covered the years 1939 to 1963, now distant history, he was sufficiently prescient to pick several major changes afoot in the 1960s, for example the beginnings of the Euro-dollar and Eurobond markets. These markets were to transform the City from the vestiges of the sterling area into a major, indeed the leading, international financial centre for foreign exchange, international bank loans and bond issues, and trading activities and derivatives. The Bank's use of 'its weight to encourage a revival of the international status of the London capital market on an "entrepôt" basis' (Artis, 1965, 77), often in the face of US opposition, testifies both to the central role of the Bank, and Mike's early recognition of it.

Foundations was, effectively, Mike Artis' PhD. At this juncture Oxford distanced itself from the American PhD system, so that one instead wrote a book. However, by the date of publication, Mike had left Oxford and had become a Lecturer in Economics at the University of Adelaide.

The move to Adelaide

In 1960 Harold Lydall, Deputy Director of the Oxford Institute, had become dissatisfied with the Institute and went to Australia, first to the University of Western Australia, and then to a Chair at the University of Adelaide, heading a department in his words 'full of young talent'. Harold then head-hunted Mike, who joined in 1964.

There Mike formed his friendship with Robert (Bob) Wallace, whose time at Oxford overlapped with Mike's. That led to a shift in the direction of Mike's research as he and Bob began to study Australian fiscal policy, a topic which, in comparison with Australian monetary policy, had attracted little academic attention. Meanwhile Bob and Mike became two of the four foundation members of what was initially the University of Adelaide at Bedford Park, which was later to become Flinders University.

They presented the first fruits of this research at an Australian and New Zealand Association for the Advancement of Science (ANZAAS) conference in January 1967, but the bulk of the work came out later, as two chapters (the only ones) on fiscal policy (one conceptual, the other empirical), in a compendium (edited by Neil Runcie) on *Australian Monetary and Fiscal Policy* (Artis and Wallace, 1971). The section 'Assessing the fiscal impact', the analytical contribution, deserves to be remembered as a seminal paper. They argued that the main macroeconomic function of the Budget should be to influence overall demand and GDP (functional finance). By this criterion the summary indicators of the 'thrust' of the annual Budgets used by Australian Treasurers since 1945 were all judged to be woefully inadequate, and much the same was true of academic work. It was then proposed, along Keynesian analytical lines, how the effect of Budgetary measures on the economy might, and should, be measured. Based on these analytical tools, the authors then turned in the second chapter to an historical assessment of all Australian budgets between 1945 and 1966. Endorsing their work, their ANZAAS discussant, John Nevile, noted that their fiscal multipliers were very similar to his, obtained from a large-scale econometric model.

Mike continued to use his expertise in fiscal policy in his later career. In 1972 he wrote a chapter (Artis, 1972) on 'Fiscal policy for stabilisation' as used by the Labour Government in 1964–70 (finding that it was distorted in practice by the failure to counteract balance of payments weakness and by the need to support the subsequent 1967 devaluation), and it became one of the themes he extended while in his first years at Manchester University.

Return to the UK

The Prices and Incomes Board

The UK Government referred the question of the system and level of bank charges to the National Board for Prices and Incomes (NBPI) on 22 June 1966. Aubrey Jones, its Chairman, invited Mike to join the Inquiry as Consultant, and immediately following the ANZAAS conference Mike left Flinders University to return to the UK. There is no internal evidence, nor indeed any acknowledgement (to him or any other assistant), of his work for the NBPI. But his own subsequent accounts suggest that he played an active role, and that his time in Australia had left its mark. He recalled that ‘his close and direct questioning of one of the witnesses provoked the response “Are you an Australian or something?”.’

When the NBPI Report on Bank Charges (Report No. 34) was completed (1967), it was critical of the cartelised rate structure in the banking system, lack of competition and the practice of maintaining hidden reserves. When much the same field of enquiry opened up in the following year by the referral to the Monopolies Commission of the then proposed merger between Barclays and Martins Banks, it was natural for Mike, given this prior experience, to write a review of this second Report for the *Bankers’ Magazine* (Artis, 1968), again critical of the same subjects. These reports helped to set the climate of ideas that led up to the Competition and Credit Control reform in 1971. Mike’s assessment was that technology would change banking dramatically and that the structure of fees and charges needed to be reformed. This was correct, but his views were often ignored. When asked how he felt about that by an Australian colleague, Mike replied that ‘some people like one’s work and others don’t. I would be really concerned if people I liked didn’t like my work. Otherwise, I stick to my own standards.’ Although never again working in Australia, the Adelaide connection continued; for example, once at Swansea his first visitor was Dr Barry Hughes of Flinders University, and his second was Mervyn Lewis (co-author of this memoir).

The National Institute

Later, in October 1967, Mike joined the National Institute for Economic and Social Research (NIESR), initially as Assistant Editor of the *National Institute Review*, but with a clear expectation of taking over from Blackaby, who had been its Editor since it began in January 1959. Worswick, Director

of NIESR, had taught Mike at Magdalen, and was aware of his abilities. Mike arrived just in time to participate in publishing the November 1967 issue. He then took over as Editor in August 1968, bolstered by a newly formed Editorial Board. A year later, in November 1969, he edited the fiftieth issue of the *Review*, marked for the occasion by a newly designed cover and a somewhat revised layout, as well as an Introduction by Lord Rotherhall.

In those years, neither the detailed forecasts of the Treasury, nor (even more closed to the public) of the Bank of England, were published. A major role for the NIESR, and for its *Review*, was to provide publicly accessible forecasts for the remainder of the current year, and for the next year, of likely economic developments in the UK ('The Home Economy') and in the World Economy. Besides the forecasts, special articles expanded on functional relationships and forecasting methods, or were the research subjects of academics seconded to the NIESR or of particular interest to the staff.

Mike Artis, assisted by Bob Nobay, wrote one such special article on 'Two aspects of the monetary debate' (Artis and Nobay, 1969) in which (following various studies in the USA) they used reduced-form regressions comparing the relative efficacy of fiscal and monetary changes. They found that fiscal measures, rather than monetary ones, appeared to be 'more powerful and certainly the quicker acting'. That result probably gave some comfort to the NIESR staff. Their forecasts gave little, or no, emphasis to monetary data, and the NIESR stance was firmly Keynesian, anti-monetarist, and pro-incomes policies.

Mike Artis was by preference and training a macro-monetary economist, rather than a professional econometrician or model-builder, and most of the technical work in developing and extending the model(s) then used by the NIESR was taken on by others, more specialised economists such as Ray Byron (another link to Adelaide), George Fane and Mike Surrey. Nevertheless, Mike was a highly competent and efficient applied economist and, with his prodigious work rate, played a full role in the, inevitably largely judgmental, process of moving from a model print-out to a fully articulated forecast. At the Southampton Conference (1969) on Short-Run Econometric Models, it was Mike who gave the paper on 'Short-term economic forecasting at NIESR' (Artis, 1970).

By May 1972, however, Mike had been at the Institute five-and-a-half years, and had participated in nineteen issues of the *Review*. Being Editor does not leave much time for original, personal research and during these years he had authored only three academic papers. It was time to move on.

University of Wales, Swansea: 1972–6

Harry Johnson had returned to the UK to take a Chair at the London School of Economics (LSE) in 1966. On arrival at LSE, he gathered a group of younger monetary economists, several of whom, notably David Laidler and Michael Parkin, were willing to challenge the mainstream Keynesian approach to inflation (i.e. via incomes policies). In 1969 Harry founded the Money Study Group (MSG).

Although Mike Artis and the NIESR were, institutionally, supporters of Keynesian analysis and incomes policies, he was nonetheless essentially a monetary economist, and prepared to assess all arguments on their merits. Consequently, he gravitated towards Harry Johnson's coterie of monetary economists. David Laidler writes (personal correspondence):

From its very beginning in 1969 he [Mike] was a regular participant in Money Study Group activities. He was at all the big conferences that produced volumes (Hove, Sheffield, LSE, Bournemouth) and he was also a major player in the editing of *Readings in British Monetary Economics* that went out as edited by Harry Johnson and an MSG Committee. In my memory, the point about Mike was that, though a bit of a Keynesian cost-pusher among the monetarists, he was open minded and willing to listen as well as talk. Also, and very important, he knew a lot more about the institutions and details of data than any of the rest of us (his stint at NIESR presumably gave him this) and in this respect he was a particularly good influence!

One of these monetary economists, and close to Harry, was Bob Nobay, who had been a research economist at NIESR when Mike arrived in October 1967. They jointly wrote the 1969 *Review* paper, and edited together three conference volumes.

Almost all of the available main writings on monetary analysis then emanated from the USA. To provide a somewhat equivalent UK set, Harry encouraged the MSG to provide *Readings in British Monetary Economics*. The selection of papers to be included was made by Artis, David Croome, Norman Gibson, David Laidler, Marcus H. Miller, Bob Nobay and Michael Parkin, the leading young UK monetary economists of the day, and included no fewer than five excerpts from Mike's own work.

So it was no surprise that, aged thirty-four, Mike was appointed to a Chair at Swansea, starting in September 1972. In doing so, he completed a triumvirate of monetary economists similarly appointed: E. Victor Morgan (1945–66), Edward (Ted) Nevin (1968–85) and Mike (1972–6). Interestingly, Victor Morgan left Swansea for a Chair at Manchester, and so did Mike in due course.

Those who met Mike know that he possessed a keen, if understated, sense of humour. His dry wit was in evidence (as reported by Hughes) in the opening remarks of his 1973 inaugural lecture. Noting that he was the Professor of Applied Economics while Nevin was simply Professor of Economics, Mike inquired whether that was because Ted's economics was supposed to have no application.

One of Mike's students from Adelaide University was Mervyn Lewis (then an Economics Senior Lecturer there), who was part of an Honours Money class of two in 1964; he spent six months in Swansea and six months in Manchester. Upon arriving in Swansea, Artis suggested that it was worth looking into the determinants of the UK demand for money. This was a happy turn of events, as their collaboration then resulted in four articles, two books and three chapters in books. Although these publications also covered a time when they had Chairs in Manchester and Nottingham respectively, it makes sense to discuss them here.

After Milton Friedman in 1956 defined the quantity theory (of money) as essentially a theory of the demand for money, estimating demand for money functions became all the rage for at least the next two decades. There were three issues: (i) Friedman's empirical hypothesis that the demand for money is highly stable; (ii) his contention that 'money matters' for the economy; and (iii) that important factors govern the supply of money that do not affect the demand function.

Artis and Lewis' first paper, in *The Banker* (1974), examined the stability of the demand for money. It was given at an MSG meeting at LSE in November 1973, memorable to the authors because they had to catch a return train to Swansea. However, an IRA bomb scare meant that they were trapped in King's Cross, the deepest tube station, with all escalators switched to coming down. Somehow they managed to run up a bank of down escalators (not recommended) in order to catch a taxi to Paddington.

In this article, they considered recent concerns about the stability of the demand for money. If such a relationship is relatively stable, then this supports monetary control policies. Indeed, from the late 1960s onwards the monetary authorities increasingly emphasised monetary aggregates. In common with other similar research, the Bank's equations in Goodhart and Crockett's (1970) *Bulletin* paper appeared to rest on three basic ideas. First, the amount of money which people and business firms wish to hold varies directly with the flow of money income, and inversely with the interest rate. Second, it was assumed that transactors in aggregate can always obtain the money balances that they require, so that the money

supply is determined by demand. Finally, the concept of ‘partial adjustment’ was incorporated—the idea that people will not move to their desired long-run money holding immediately but will take time to do so.

It was widely believed in the City that these research findings (published under the title ‘The importance of money’) may have heralded a new approach by the Bank:

Recent UK monetary policy has placed increased emphasis on control of monetary aggregates, a policy based, it seems, on an official assumption that there is a stable demand for money. (Artis and Lewis, 1974, i)

On this basis, and given that during the two years to mid-1973 the quarter-to-quarter rate of growth of the money supply on the M3 definition averaged 22.0 per cent per annum, and for M1 averaged 14.7 per cent, the task that Artis and Lewis set themselves was to check how far that pattern of monetary growth could be accounted for by demand for money functions as fitted in the 1960s.

So, the authors began by re-estimating twelve variants of the standard demand function, 1963 QII–1970 QIV. By normal statistical criteria, the equations obtained seemed realistic and well-determined, with satisfactory overall fits. But their forecasting ability, whether for M1 or M3, having been quite good for 1971, was disastrously bad for 1972 and the first two quarters of 1973, with the money supply massively exceeding the forecast demand for money.

Several explanations were offered. Even after allowance was made in the demand equations for three factors that could have shifted the demand for money (Certificates of Deposit, bond price variability, the ‘own’ rate on money), the massive overshoot remained. This left a further possibility, namely that the money supplied may have been in excess of that demanded, producing subsequent pressures on asset prices, incomes and the balance of payments until the desired ratio of money to nominal income became restored. This latter was basis of the authors’ other two articles on this topic.

To explore the excess money supply idea, they had first to refute the view that the extant stock of money must be demanded. It is, obviously, held but not necessarily demanded, except temporarily in the process of moving from one equilibrium to another. If new supplies augment the money stock fast enough, transactors could find their money holdings in excess of expectations. The dissipation of excess monetary holdings through portfolio adjustment and spending—over time—could be temporarily overwhelmed by further unexpected monetary increments.

The contrary view that the supply of money was necessarily demand-determined was, most likely, because of the Bank of England's policy of stabilising the rate of interest (at varying levels). Given this policy, the Bank would then have to supply the money to validate it, rendering the money supply demand-determined.

However true of the 1960s, Artis and Lewis (1974) contended that the conditions of 1972–3 offered an inhospitable context for this latter view. Highly expansionary budgets, the floating of the pound, the abolition of advances' controls and changes of tactics in the gilt-edged markets all suggested reasons why the stock of money might not be determined by demand but rather in excess of it. If so, the standard demand function would be incorrectly specified, and its failure unsurprising.

In their *Manchester School* article (Artis and Lewis, 1976), they advanced two alternative models, both recognising that money demand may have been adjusting to money supply rather than the opposite. In the first model, money income is assumed to bear the adjustment. An increase, say, in the money stock raises the actual ratio of money to income relative to the desired level. Discrepancies between actual and desired money holdings set in train a rearrangement of expenditures, output, and prices until the ratio of money to income is brought to the desired level. The model specified that this scenario would likely occur over time, and allowance was made for factors that may interrupt the adjustment and constrain money-holders' ability to reach equilibrium. In fact, on the estimates obtained, the adjustment appeared 90 per cent complete after twenty months, and the parameters of the model seemed to be affected less by the inclusion of data for 1971 and 1972 than the standard model.

In their second approach, they assessed whether the rate of interest (rather than income) could provide the market-clearing mechanism, at least in the short run. With interest rates being the dependent variable, they effectively turned the equations 'the other way round'. Overall, they contended that their model results indicated that changes in the money supply could generate partial adjustments of income and interest rates, thereby challenging the conventional notion that the money market always clears in the short run. The results were consistent with the view that changes in the money supply had been interacting with a relatively stable demand function.

Their third paper, in *Economica* (Artis and Lewis, 1984), sought an alternative approach to the issue of stability. Paish (1959) and Dow (1959) presented evidence in their Radcliffe submissions of an inverse graphical relationship between the consol rate and the ratio of money to income

(the inverse of the velocity of money). Artis and Lewis replicated this and then added the out-of-sample observations for 1958–81. With the exception of 1973–6, their regression line fitted the extra-sample data extremely well, suggestive of long-run stability of the demand for money, provided that the observations for the mid-1970s could be accounted for. Artis and Lewis attributed this to supply shocks that forced the private sector off its demand curve until the disturbance became eliminated via the induced adjustment of prices, incomes, interest rates and the money supply itself, restoring the ratio of money to income to its original path.

Their work had an enduring impact in a number of respects. First, they appear to have been the first to have challenged the view—described by them as fallacious—that the stock of money must be demanded, and that the supply of money was necessarily demand-determined. Second, following on from this argument, they helped usher in a strand of monetary analysis based on ‘buffer stock money’ and ‘disequilibrium money’. Third, turning the equations ‘around the other way’ appeared to provide more realistic lag structures.

Such research then led them to write two books on monetary policy. The first, *Monetary Control in the United Kingdom* (Artis and Lewis, 1981), was focused, in addition to reviewing research on the demand for money, on the nature of bank intermediation and its implications for monetary control. The second, *Money in Britain* (Artis and Lewis, 1991), was widely used by students, influencing a generation of monetary economists. The book also devoted more attention to the European Monetary System (EMS), the Exchange Rate Mechanism (ERM) and European Monetary Union (EMU). The latter emphasis led, when the ERM broke down in August 1993, to them being invited by the *Oxford Review of Economic Policy* to evaluate the experience and its implications (Artis and Lewis, 1993: ‘Après le déluge: monetary and exchange-rate policy in Britain and Europe’). They argued, accurately, that a ‘quick’ move to EMU could be a solution attractive to Europe (sans Britain). Thereafter, for much of the rest of his career, such European issues were to occupy a lot of Mike’s attention.

The University of Manchester: 1975–95

In May 1975, while still at Swansea but in the process of moving to Manchester, Mike was summoned to Paris (along with one of the authors

of this memoir, Charles Goodhart) to meet Dr Jim Cairns, then Treasurer in the Australian Labor Government. Cairns had become unhappy with the liberal, market ideology of both the Treasury and the Reserve Bank of Australia, and was now looking for an outsider to become Governor of the Reserve Bank who would help him to shift the allocation process from a pure market system to a planned system based on social priorities. The name of Artis (and that of Goodhart) had been suggested to him by Geoff Harcourt (again an Adelaide connection, a leading Australian academic who advised the Labor Government). In the note for the record at the time for the Bank of England Goodhart wrote (2 June 1975):

Professor M. (Mike) Artis is much more in sympathy with Cairns, knows Australia, and was a minor adviser of Whitlam and an ALP member when there. He is a good, well-balanced monetary, macroeconomist: he edited the *National Institute Review* before going to Swansea. Cairns, in a longer interview with him, made more effort to attract him, discussing terms of pay, etc. He would seem a sensible choice in the circumstances, whereas I would guess that Cairns has now put me among the unacceptable 'market' men. However Artis is doubtful whether he should go any further on personal grounds (family worries, doubts about the responsibility, etc.).

In the event, however, both Cairns and the Labor Government soon ran into political troubles, and the chance for Mike (or Charles Goodhart) to become Governor of the Reserve Bank of Australia—though always a long shot—evaporated.

In 1974 David Laidler and Michael Parkin were becoming frustrated with their positions at the University of Manchester. They faced continuing uphill battles to get their (more monetarist) papers published in top English journals. In particular, their battle to have their paper on 'Inflation' in the *Economic Journal* (Laidler and Parkin, 1975) was epic. Pay scales at Manchester were restricted. The UK academic scene was limited in comparison with that in North America.

Enter Harry Johnson. He used his influence, and connections with Grant Reuber there, to help resettle David and Michael in the University of Western Ontario, in 1975. But that left a huge gap at Manchester. Harry knew just who could fill that gap. Within the pecking order of UK universities, Manchester lay above Swansea. Thus, Mike was happy to move, even though Manchester was then known for fractious infighting between the Marxist and mainstream wings of its Economics faculty. Moreover, Mike must have seemed especially well suited for his new position, since he disliked conflict and could comfortably interact with almost everyone.

Once Mike arrived in Manchester he began to diversify his research fields further away from his earlier concentration on monetary economics. His first foray outside that field in Australia had been into the study of fiscal policies there described above. He continued this work on fiscal issues with two self-authored papers, and others with Marcus Miller, Chris Green and Robin Bladen-Hovell, Elias Karakitsos and Barry Dwolatzky, examining the effects of fiscal policies and undertaking simulations with the Treasury and NIESR models.

The second additional field which Mike entered in these early years at Manchester was the form and existence of a UK wage equation, involving two overlapping papers; the first, with Marcus Miller, was on 'Inflation, real wages and the terms of trade' (Artis and Miller, 1979); the second, his own, was 'Is there a wage equation?' (Artis, 1981). The starting point was that the Phillips curve, relating wage inflation to unemployment, had broken down in the context of worsening inflation through the 1960s and 1970s. This had been replaced by two alternative hypotheses—the augmented expectations version of the Phillips curve, and the target real wage model. Neither of these, however, proved 'robust' in the face of empirical testing, leaving open whether any reliable wage equation could be found.

This was a period when monetary targetry, even if only of the pragmatic variety, was in vogue. Most of the prior analytic work had been for the United States, which approximated to a closed economy. How would targets operate in an open economy context, such as the UK? This was the subject which Artis and David Currie (1981a) analysed in an *Oxford Economics Papers* paper, reprinted in a volume edited by Eltis and Sinclair (Artis and Currie, 1981b). Their overall conclusion was (Artis and Currie, 1981a, 196):

for a small open economy in which cost-mark-up pricing dominates, stabilisation of the nominal exchange rate (by means of suitable changes in domestic monetary policy) offers rather better prospects for price stabilisation than do monetary targets. Only if disturbances to the economy arise primarily from changes in the general level of foreign prices are monetary targets likely to be clearly superior, and we would not regard this as the relevant case for the UK.

Having then covered monetary and fiscal policies in his research, together with wage determination, Mike felt ready to pull all of these strands together in a textbook, *Macroeconomics* (Artis, 1984). The blurb on the back cover concluded:

The volume seeks to convey a useful macroeconomics—one that is suited to policy applications. Diagrams play a large role in the exposition although the use of formal mathematics is kept to the minimum needed for a rigorous exposition.

In fact, the role of diagrams was understated, for they probably played a larger role than in any equivalent book. A lot of the book was relatively standard: IS/LM with the addition of a BB curve for the Balance of Payments, credit counterparts for the money supply, and, for much of the volume, prices and wages were treated as fixed in Keynesian style. Perhaps the most original contribution was the emphasis on asset accumulation and wealth as determinants of long-run equilibria. While the volume may not have added greatly to his academic reputation, it put his name before many future macroeconomists and, being reprinted at least twice in 1986 and 1989, the royalties may have helped. It was only later after Mike moved to Italy that money became more plentiful.

Meanwhile, Mike continued to be sought out as editor, par excellence, taking over Prest and Coppock's *The UK Economy: a Manual of Applied Economics* when those authors wanted to hand over the baton, and his first edition of many came out in 1986 (Artis, 1986). The fourteenth edition (1996), for example, had some eleven chapters by nine authors on a variety of aspects of the British economy, one of which was written by Mike, jointly with Harvey Armstrong, on 'The UK and the European Union'. Indeed, from the mid-1980s onwards Mike's academic interests turned sharply towards European institutions and policies, and their relationship to the UK. Mike was never an abstract theorist and, as an applied economist, wanted to direct his economic knowledge and skills to the leading issues of the day.

From Mike's vantage point these concerned whether the volatility of exchange rates and interest rates had changed after EMS, whether exchange rates had become more predictable, whether there was less sign of misalignment in real exchange rates, whether there was more policy convergence, and more convergence in wage rate adjustment, and finally whether capital controls still played a major role in stabilising the fixed, but adjustable, pegged system. In order to employ the most advanced non-parametric econometric techniques he teamed up with Mark Taylor to produce no less than ten subsequent joint papers in the years 1988 to 1995, five of which found that short-run exchange volatility had declined, that EMS misalignments had not fallen and currency substitution had not risen. Three papers on the role of exchange controls were inconclusive, while two papers explored the consequences of exchange rate misalignment.

There were two other strands of Mike's 'European' and 'international' research at this time. One examined what appeared to be very different responses of German wages to unemployment (i.e. an old-style Phillips curve) than in France, Italy or the UK. The other strand considered the advantages of international coordination to stabilise exchange rates, most notably the Chatham House paper with Sylvia Ostry and his own paper (Artis, 1989). Artis and Ostry (1986) proposed nominal income targets. Mike always saw exchange rate pegs, in EMS and/or EMU, as a means for gaining commitment to greater disinflationary policies. EMS/EMU was seen as a way of inducing the more lax members to follow German counter-inflationary leadership, a hypothesis advanced in his article with Dilip Nachane in *Weltwirtschaftliches Archiv* (Artis and Nachane, 1990).

Although Mike had not been a forecasting technician, he remained a close participant in the forecasting process. In the mid-1980s and early 1990s this led to two areas of research. The first was the accuracy of macro forecasts. This began with an invitation, likely from Andrew Crockett who was then running the IMF *World Economic Outlook*, to assess the accuracy of the WEO, done in 1988 (Artis, 1988). Besides comparing WEO forecasts with actual outcomes, another yardstick was to compare them with auto-regressive models. Following that, Mike teamed up for the first time with Wenda Zhang, a Chinese economist from Fudan University who had come to Manchester University (and was to become Mike's most important co-author in these decades) to study how WEO forecasts compared with Bayesian vector autoregressive (BVAR) models, resulting in an article and a paper, as well as a 1996 reprise of his earlier IMF study on WEO forecasting accuracy. This latter study assessed how well cyclical turning points could be predicted, a subject that he had written on in 1993 and 1994. Papers with Sean Holly and with Scott Moss and Paul Ormerod continued these themes. At much the same time, with modelling the economy by adaptive (backward-looking) expectations giving way to rational (forward-looking or model consistent) expectations, Mike, along with Robin Bladen-Hovell and Yue Ma, applied such approaches, in an *Oxford Economics Papers* article, to assess the Labour Government's policies on expenditures, tax rates and interest rates, 1974–9 (Artis et al., 1991).

By the mid-1980s Mike Artis' standing as a leading macroeconomist in the UK was being widely recognised. He became a member of the Panel of Academic Consultants at both the Treasury and the Bank of England, and gave a paper to the latter on 'Why do forecasts differ' (1982). He was Joint Managing Editor of *The Manchester School* for eighteen years,

Associate Editor of the *Economic Journal* for ten years and President of the Manchester Statistical Society (1987–9). More importantly, he was elected a Fellow of the British Academy in 1988, as one of the leading applied macroeconomists in the UK. He was then awarded a Houblon-Norman Fellowship at the Bank of England in 1989–90, followed by a Nuffield Foundation Fellowship at Manchester.

As the 1990s progressed, Mike's focus turned increasingly, almost exclusively, towards European issues. This was a decade of great progress on that front. The collapse of the ERM in 1992–3 had not led to a reversion to generalised floating and/or exchange controls, but to a determination of the central political elite to press forward to a single currency, as predicted in the Artis and Lewis (1993) article, culminating in the establishment of a single currency Eurozone on 1 January 1999, and the introduction of euro notes and coins on 1 January 2002.

It was an exercise in political economy, and Mike eagerly participated. Perhaps his most widely read publication was the 1995 OUP book that he edited on *The Economics of the European Union: Policy and Analysis*, initially with Norman Lee (Artis and Lee, 1995), and from 2001 onwards with Frederick Nixon (Artis and Nixon, 2001). In this he wrote the chapter on 'European Monetary Union', first solo and later with Robin Bladen-Hovell (Artis and Bladen-Hovell, 2001). Cohorts of economics students will have read this work. But he wrote many more such political economy studies on the transition to EMU.

On balance, Artis was a keen supporter of greater monetary unification, especially for the main continental countries, though more hesitantly for the UK, since the latter was seen to be more asymmetric in its characteristics. In addition to the obvious advantages of lower transactions costs and less (exchange rate) uncertainty, Mike prized the counter-inflationary and fiscal discipline that such a system would bring, as well as supporting the general idea of greater European unity. The downsides were the loss of an adjustment mechanism, and the Walters critique (that a single zone-wide interest rate would have the perverse effect of stimulating (depressing) more (less) inflationary regions in the zone). In an unhappily prophetic article (Artis, 1992), 'Counter-inflationary policy in the framework of the EMS', Mike argued that the Walters critique could be offset by more stabilising fiscal policy and/or exchange controls, without fully appreciating that politics would usually prevent surplus countries from fiscal expansion or deficit countries from austerity during booms, although a more kindly interpretation is that he was forewarning the European authorities as to what policy levers were needed to be put in place.

With his focus now fixed on European monetary issues, there was a clear attraction to move from Manchester University, in a somewhat Eurosceptic country, where European issues always ranked behind domestic ones, to a newly established centre, the Robert Schuman Centre at the European University Institute (EUI), which specialised in the subject that Mike now took for his own. Moreover, the EUI site (San Domenico near Fiesole outside Florence) is breathtakingly beautiful, and both the academic community and the wider Italian population naturally welcoming.

The European University Institute at Florence

Mike applied in 1994 for the advertised joint position of a Chair in the Economics Faculty, and the (first) economist to join the newly established Robert Schuman Centre for Advanced Studies. The EUI was a good place to go to develop his research agenda. It had a prestigious reputation. Being a graduate Institute it had a favourable salary/teaching requirement trade-off.

He went through the normal interview process, chaired by the first Director of the Schuman Centre, Yves Mény, who was to become a close friend. Yves recalls that Mike was clearly the best candidate, but the proposal to appoint him was not easy as it was the very first case of a joint appointment between a department and the newly established Schuman Centre. At the time, Mike only spoke English and French, the former with a northern accent that apparently some there found hard to understand. He subsequently learned Italian; a good knowledge but initially reticent about speaking. These communication difficulties were, however, fully offset by his kindness and constant availability to students and colleagues.

Mike was appointed to this joint position from 1 January 1995. The term of the Chair was for four years, renewable once for another four years. The main teaching function was the training and supervising of PhD students, of whom Mike had twenty-three during his years there, from cohorts ranging from 1993 to 2002, and from nine countries. Four of these, Fiorella de Fiore, Martin Ellison, Marcel Fratzscher and Mathias Hoffmann, along with Ramon Marimon of the EUI, organised a conference in his honour in June 2016 at EUI. Several of his students collaborated with him in research and publication.

The second main function was to undertake and encourage research, especially on European issues. Mike took part enthusiastically both in his

own research, described later in this memoir, and in supporting the research of others. He played an important role in the seminar programme and in the establishment of the Pierre Werner Chair of Monetary Integration, first held by Giancarlo Corsetti. Mike was never pushy, and although a little hesitant at times in the new environment, he got on extremely well with the other economists (and other academics) who followed him there, such as Roberto Perotti, Rick van der Ploeg and Giuseppe Bertola.

His research there mainly followed two separate, but connected, strands, both related to EMU. The first, more technical, set of papers analysed the statistical inter-relationships between the EU economies (and with the United States and Japan), focused primarily on the relationship between the UK and the core countries of EMU—for example, Germany, France, Benelux. The second set consisted of a series of macro-economic commentaries on the concurrent political economy developments in EMU—for example: Gordon Brown's five tests for UK membership of the single currency; the Stability and Growth Pact; EU unemployment; and an inflation target for the ECB—which were closely followed in policy circles in the UK.

The first set includes a sizeable series of joint papers with Wenda Zhang, who moved to be with Mike at the EUI later in 1995, before subsequently returning (in 1996) to Manchester Metropolitan University. Mike was the senior economist, driving many of the ideas, but Wenda, a mathematical economist, will have done the greater part of the technical exercises. These include works on common European Business Cycles, on Clustering in EMU, on European Interest Rate Linkages and on European Exchange Rate Linkages.

Of these statistical studies, those seeking to assess the extent of 'clustering' between countries are, in our view, the most original and insightful, resulting in countries ranked in their closeness of relationships. While this did not lead to any major surprises (there was a central core European Group, a separate Northern Group—UK, plus Ireland and Scandinavia—and a Club Med Group), it allowed such common understandings to be nicely quantified and graphically displayed in a useful way. In particular, Mike and Wenda were able to show the clusters of countries pictorially as faces, or emoji, where each aspect of the face represented the closeness of each linkage, with Germany, as the anchor country, and North America and Japan disapproving or unimpressed.

Before the ERM was formed in 1979 there was a single world business cycle, largely led by the United States. After 1979, however, there was a core of continental European countries whose economies moved in

concert with Germany, the anchor country, but separately from the United States. However, the UK was not in this group. Instead, along with the main Scandinavian countries, its currency continued to fluctuate in conjunction with the United States.

These findings were a challenge for him, since he would clearly have preferred the UK to adopt a much closer European involvement. He had to face the issue squarely and his conclusion in 2000 was that:

The evidence reviewed in this paper suggests no 'strong' economic case for participation in the EMU. If anything, the organizing framework of the OCA approach suggests that the UK might be right to stay outside; in particular its stochastic experience is different from that of the 'core group' within the Eurozone and on these grounds the UK will need a stabilizing policy instrument. Membership of EMU would remove the possibility of using monetary policy and a floating (or adjustable) exchange rate in that role. Reliance on labour-market flexibility alone is unlikely to be enough and, in the event of joining, there will be a premium on fiscal policy flexibility. (Artis, 2000, 28)

Throughout, the analysis was conducted in terms of optimal currency area theory, following Mundell (1961) and later Krugman (1990). Mike's general concern was whether, in the light of optimal currency theory (OCA), the economic benefits would outweigh the economic costs of joining. Relatively little attention was paid to more political economy issues, though he did not disguise that he himself was highly sympathetic to greater European federalism. For example, in October 1990 he was one of the lead signatories of a letter to the *Independent* outlining the 'Advantages of a Single Currency' and advocating UK participation.

Despite Wenda Zhang's subsequent return to Manchester, the main technical side of Mike's research continued to be on the dating of business cycles, in the UK, the Eurozone and other developed countries, and the linkages (transmission mechanisms) between cycles in different countries, especially in relation to the key anchor countries of Germany and the United States.

As time passed, the econometric and analytical techniques that he used became increasingly sophisticated. A research exercise that had begun using simple cross-correlations between countries moved on to Markov switching auto-regressions and observed transition vector auto-regression models. Subsequently the same techniques were used to explore whether the transitional states of Eastern Europe were well suited (on optimal currency grounds) to join EMU, with a generally positive conclusion.

His research flourished at the EUI and he loved the relaxed, cheerful Italian lifestyle, as well as the food and wine (although he was not a big drinker), yet retained his love of English tea. His stay at the EUI was one of the happiest periods of his life. Even after his renewal finished at the end of 2003, he returned every summer to EUI as a Visiting (Emeritus) Professor from June 2004 until June 2009, unpaid but with full facilities.

One of the more unusual episodes of his research career occurred there in 1997–8. One of his junior colleagues, Marco Buti (now—in 2017—the Director-General for Economic Affairs at the European Commission) and the mayors of two local townships, Fiesole and Pontassieve, had the idea of running a behavioural economics experiment, to issue euro-coins and a euro ‘voucher-banknote’ in advance of the actual true euro issue in 1999, to see, for example, how the euro and the lira might jointly circulate. Mike was enlisted to act as a senior proponent, to provide greater academic gravitas, and he participated wholeheartedly. The experiment operated as follows:

The euro symbols were: a one-euro coin, a half-euro coin and a 3 euro ‘voucher-banknote’. Following the approval of the Banca d’Italia, they were produced by the Zecca dello Stato and Poligrafico dello Stato (State Mint) and the exchange rate was fixed at 2000 lire for 1 euro. From October 1, 1997 until March 31, 1998 these ‘euro symbols’ circulated alongside the lira in the municipalities of Fiesole and Pontassieve, which at the time counted 15,000 and 20,000 inhabitants respectively. Once the experiment was over, the two populations had a 3-month time for withdrawal....

Every shop involved in the project received a kit including stickers and displays which had to help identify the business’ adherence to the experiment. Other marketing devices were also conceived and included in the kit, which was also sent to the banks: posters, brochures, displays, price lists and price labels.

The project ‘Ecco l’Euro!’ consisted in fact in a wide range of initiatives including all the economic and social actors of the time on the territory of Fiesole and Pontassieve, in order to address a multiple-objective goal. (Buti, 1998, 1–3)

After his formal position at EUI ended, he stayed on in 2004 as an External Professorial Fellow. In 2005 he was awarded a George Fellowship at the Bank of England, January to July, though he and Shirley continued to live primarily at Fiesole. But then, in 2005, he was approached to take up an Economics Chair and become Director of the Institute for Political and Economic Governance (IPEG) at the Manchester Regional Economic Centre at Manchester University, though he kept close ties to EUI. Consequently, it is not really possible to mark any break between research done at EUI and in his second stint at Manchester. While the main thrust

continued to be on economic cycles in different regions and countries, he did open a new research subject with Mathias Hoffmann, explaining why a reduction in home bias, which undoubtedly had occurred as a result of greater globalisation and financial integration, failed to show up in econometric tests.

In the final years of his academic career, Mike found another regular co-author, Toshihiro Okubo from Kobe University. Together they published seven papers, all related to spatial interactions amongst business cycles. There were two new twists in that they studied much longer historical time periods, and they began to explore regional cyclical relationships within countries (for example, the UK and Japan). In both these new sub-fields, Mike worked with others, such as George Chouliarakis and Pahatch Harischandra on cycle synchronisation and with Christian Dreger and Konstantin Kholodilin, on regional business cycles. Having been appointed the Welsh Assembly Visiting Professor at Swansea in 2008, he also researched the timing of cycles in unemployment for each unitary authority in Wales.

The crowning achievement in these later years was the international symposium that he initiated and largely organised on 'Business cycle behaviour in historical perspective', held at the University of Manchester in 2009. Most of the papers presented there were published in a special issue of the *Manchester School* (Volume 79, Number 2, March 2011). Not only did this issue include two of his joint papers but he was also a Guest Editor, and the Introduction came out under his name.

Regrettably, by this time he was no longer capable of continuing his academic career. On the way driving home to his house in Knutsford on 30 October 2009 he suffered a severe stroke. Initially it was hoped that he might recover almost fully, but he was then struck down by a series of hospital infections (for example, MRSA) and became incapacitated, needing 24-hour care. His body was letting him down, yet his colleagues, especially Richard Harrington, and overseas friends who visited him can attest that his brain remained active, but unfortunately his condition deteriorated over time. He died on 8 January 2016.

Assessment

Although Mike Artis was a rounded macroeconomist, it was as a monetary economist, working largely with Mervyn Lewis, that his earlier work will be best remembered. Thereafter, he did more general work on fiscal

and wage equations, culminating in his 1984 textbook. But from the mid-1980s onwards his attention shifted towards the assessment of EMU, which he analysed mainly in terms of optimal currency area theory. His chief analytical contribution to the latter lay in the applied empirical study of the regional and country inter-linkages between business cycles. In this area he became a, indeed possibly the, leading international expert.

Those who worked with him will remember Mike as a mentor and teacher who invariably brought out the best from those with whom he interacted. He was always supportive and treated others' views, even those with which he disagreed, with respect. This is perhaps best summarised by a former colleague who said simply 'he was a first class human being'.

CHARLES GOODHART

Fellow of the Academy

MERVYN LEWIS

University of South Australia

Note: An extended version of this memoir, also including a comprehensive Bibliography of Artis' publications, and Acknowledgements of his many friends who helped us prepare this publication, is now available on the website of the London School of Economics, Financial Markets Group, Special Paper Series (<http://www.lse.ac.uk/fmg/dp/specialPapers/home.aspx>), under the heading M. J. Artis.

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