Questionnaire in advance of Treasury Committee hearing
Martin Weale

A. PERSONAL AND PROFESSIONAL BACKGROUND

1. Do you have any business or financial connections or other commitments which might give rise to a conflict of interest in carrying out your duties as a member of the MPC?

No. Although I am seeking permission to retain a role as a researcher at the National Institute I stopped all my involvement with its forecast and policy commentary immediately my appointment was announced.

2. Do you intend to serve out the full term for which you have been appointed?

I intend to serve the full term.

3. Please explain how your experience to date has equipped you to fulfil your responsibilities as a member of the MPC? In particular, what areas of the MPC's work do you believe you will make a particular contribution to, and which will you have to undertake additional research into upon your arrival?

I worked as a researcher and lecturer in Economics in Cambridge from 1979 to 1995. There my research was on issues related to macroeconomic policy and econometrics. In 1995 I became Director of the National Institute for Economic and Social Research. I was responsible for all of its activities including its quarterly economic forecast and policy assessment. I developed a strand of research on "now-casting" and short-term forecasting and on assessing the performance of qualitative business surveys as short-term indicators. I also worked on a range of data issues including conducting two official reviews on earnings statistics (in 1998 and 2008) and was a member of the Statistics Commission for almost the whole of its existence.

I am able to make a specific contribution to the MPCs work using my knowledge of the assessment and interpretation of movements of short-term indicators. My background helps me judge and has given me the tools to decide how far they should influence monetary policy decisions. I can also bring my experience to bear on the question how to balance judgement against the output produced by forecasting models.

Since arriving at the Bank I have had to learn about some of the technical details of monetary policy such as the way in which the Bank has expected quantitative easing to influence demand and the role that my colleagues expect money and credit aggregates to have on the economy. I am also learning the technical details of the Bank's modelling methods and related development work.

I have started research into the question whether the use of composite leading indicators might have helped to forecast the recent recession and thus whether there are clear lessons for those involved in forecasting the economy. I also intend to research further the question of the savings balance. This will help me understand the extent to which the economy needs to rebalance towards higher net exports or greater domestic investment and thus the extent to which the trajectory identified by the Monetary Policy Committee is consistent with a stable long run.

4. Which of your publications or papers are of most relevance to your future work on the MPC?

"The Average Earnings Index". ***Economic Journal***. Vol 110, No 461, Pp F100-121. With R. Chambers and R. Youll. 2000.

"An Automatic Leading Indicator of Economic Activity: Forecasting GDP Growth for European Countries". ***Econometrics Journal***. Vol. 4, No 1, pp S56-S90. With G. Camba-Mendez, G. Kapetanios and R. Smith. 2001.

"Quantification of Qualitative Firm-level Survey Data". ***Economic Journal.*** Vol. 478, No 112, pp.C117-135. With J. Mitchell and R. Smith. 2002.

"An Indicator of Monthly GDP and an Early Estimate of Quarterly GDP Growth". ***Economic Journal.*** Vol. 115, No. 501, pp. F108-129. With J. Mitchell, R. Smith, S. Wright and E. Salazar. 2005.

"The Concept of Income in a General Equilibrium". ***Review of Economic Studies.*** Vol. 73, pp 219-249. With J. Sefton. 2006

The Average Earnings Index and Average Weekly Earnings. Report to the National Statistician. Office for National Statistics. http://www.statistics.gov.uk/downloads/theme_labour/Wealefinalreport.pdf 2008.

"The Economics of a Reduction in VAT". ***Fiscal Studies.*** Vol. 30, pp. 17-30, With R. Barrell. 2009

"Fiscal Policy, Fairness between Generations and National Saving". ***Oxford Review of Economic Policy***. Vol 29. pp 87-116. With R. Barrell. 2010

"Qualitative Business Surveys: Signal or Noise?". ***Journal of the Royal Statistical Society***. Series A. With S. Lui and J. Mitchell. Forthcoming.

B. ACCOUNTABILITY

5. How important do you think it is for MPC members to be subject to ex post parliamentary accountability? What are the strongest and weakest parts of the current procedures in the UK?

Plainly people holding public appointments need to be accountable for their activities and accountability to Parliament provides an independent assessment of the way in which Committee members are fulfilling their roles. Appearances at the Treasury Committee at which members justify their decisions provide a degree of public scrutiny which is absent from other public appearances by members. This individual accountability, which reinforces the fact that members' votes are public is an important part of the system.

A strong feature of the current procedures, however, is that members of the committee hold their posts either by virtue of the work they do at the Bank of England or as a result of an open competition which is run in accordance with standard public sector appointment procedures and that they are selected because of their fitness to make decisions on monetary policy rather than to represent any sectional interest. A weakness of the current system is that the Treasury Committee is not always able to hold its hearing ahead of the candidate taking up their appointment.

6. If you were to make yourself available for reappointment to the MPC at the end of your term, what criteria should be used to assess your individual record as an MPC member?

There are a number of criteria which should be used. i) Has the individual made a valuable contribution to the setting of monetary policy? ii) Has her/his vote been consistent with what was known about the state of the economy and particularly the prospects for inflation at the time the vote was cast? iii) Has she or he played a full role in communicating monetary policy decisions and the factors which lie behind them to the public?

7. Do you believe there is merit in having an individual paragraph in the minutes of MPC decisions in which to explain your most recent vote?

There are arguments for and against this and on balance I am against it. Certainly, to do so would enhance both accountability and communication because Parliament and the public would be able to judge the factors behind members' decisions and have a more immediate understanding of why they have voted they way they have. The present procedure comes close to this only if one member votes in a particular way since, in such circumstances, an explanation of why one member has differed substantially from the others is immediately attributable. There is an obvious case for generalising this; at present members voting may not know whether their position is going to be clearly distinct or not, unless their views are sought by the Chairman near the end of the vote.

However, the argument against is that, although departures from the consensus by one member might become more likely (since details of the factors behind their votes would stand out less), members' positions might become more entrenched than they are with the current arrangements. In any case such paragraphs would probably have to be distinct from the minutes since they would most practically be prepared immediately after the event; should they be prepared in advance it would not be possible for MPC members to take account of valid arguments made by other members at the meeting.

8. Do you think the Treasury Committee should have a veto on MPC appointments?

This is really an issue for the Treasury Committee and Parliament more generally to decide. The only point I would make is that the appointment process would need to allow time for the relevant hearing to take place before the candidate concerned had started work.

C. OTHER PROFESSIONAL ACTIVITIES

9. What other professional activities do you expect to continue/ undertake in addition to your position on the MPC and how do you intend reconciling these activities with your position as a MPC member?

I intend to remain for two days a week a researcher at the National Institute although the final arrangements are still to be settled. It is likely that some of my research will be on micro-economic issues- for example I have incomplete work on returns to life-long learning- while other work will be more relevant to the macro-economy. I do not see any conflict with my duties on the Monetary Policy Committee; I stopped being involved with the National Institute forecast immediately my appointment was announced. I have some involvement in other public activities- for example I am Chairman of the Advisory Board for the Centre for the Measurement of Government Activity at the Office for National Statistics. I expect to continue with such roles and, if approached, to take on similar new roles from time to time, subject to approval. There are some other more minor activities, such as reviewing proposals submitted to the Economic and Social Research Council, which I am approached about from time to time and which I would expect to continue with.

10. Outside of MPC meetings, what activities do you intend undertaking in order to add to the public's understanding of the role and decisions of the MPC?

There are three ways in which I can add to the public's understanding of the role and decisions of the MPC and I expect to pursue all three. First of all I am developing a programme of regional visits which will provide a chance to meet directly with people who are affected by the MPCs decisions. Secondly, I will be available for newspaper interviews on issues related to monetary policy. And thirdly I will make public speeches as and when appropriate.

D. MONETARY AND ECONOMIC POLICY

11. How might the system of control over monetary policy in the UK be improved? Is the framework of an explicit symmetrical inflation target the best within which to conduct policy? Has the MPC been given an appropriate inflation target?

Since the banking crisis it has been recognised that the overall policy framework needs to cover more than simply the use of the interest rate to control inflation. The crisis demonstrated that the framework also needed to pay attention to credit expansion and its implications. It showed the risks that could arise if credit became over-extended even if inflation showed no obvious sign of getting out of control. The policy framework in place until the 1980s had other instruments such as credit controls and special deposits which made this possible and, with the establishment of the Financial Policy Committee it is likely that related instruments, perhaps variable capital ratios for banks, will be adopted.

This raises the key issue of the relationship between interest rate setting by the Monetary Policy Committee and the use of other policy instruments by the Financial Policy Committee. With the FPC likely to meet less frequently than the MPC and with a substantial overlap of membership, it makes sense for the MPC to set policy taking the FPC's decisions as a given, but also being aware of how the FPC is likely to respond to any policy changes made by the MPC. This should minimise the risk of a lax attitude being adopted to the risk of a future financial crisis because of a perception that economic activity was weak. Such a problem would be more likely to arise if the decisions of the FPC and the MPC were taken by a single body.

I am firmly of the view that an explicit symmetric target offers the best framework within which to conduct interest rate policy. If there were simply an upper limit then the MPC might be tempted to hold inflation so low that it would become difficult for relative wages and prices to adjust without fairly frequent downward movements.

The fact that people's expectations of inflation are broadly consistent with the inflation target is itself a strong reason for not changing the target. In particular, any increase in the target would deliver only transient benefits for the public sector, in terms of an inflation-induced abatement of the national debt. But the costs in terms of loss of policy credibility would be substantial and long-lasting and overall, there is no good case for any change to the inflation target.

12. What consideration should be given to the exchange rate and to asset prices, including house prices, within the framework for inflation targeting? In particular, how should monetary policy react to asset price bubbles?

The logic of the inflation targeting framework is that consideration should be given to the exchange rate and house and other asset prices only to the extent that they provide information about the future path of inflation. The route by which the exchange rate influences inflation is well understood even if not, as recent experience has shown, precisely understood; it operates both as a direct driver of prices and as an influence on demand. Other asset prices including house prices work through the second route. Since housing costs do not as yet have an explicit role in the Consumer Price Index[1] they have at present no direct influence on measured inflation.

This analysis suggests that the MPC should look at asset prices insofar as they are relevant to the task of controlling inflation. Should the MPC look at them for any other reason? One

[1] The ONS does however have work in hand on examining methods of including housing costs in the CPI and I have been contributing to this as a member of the relevant committee.

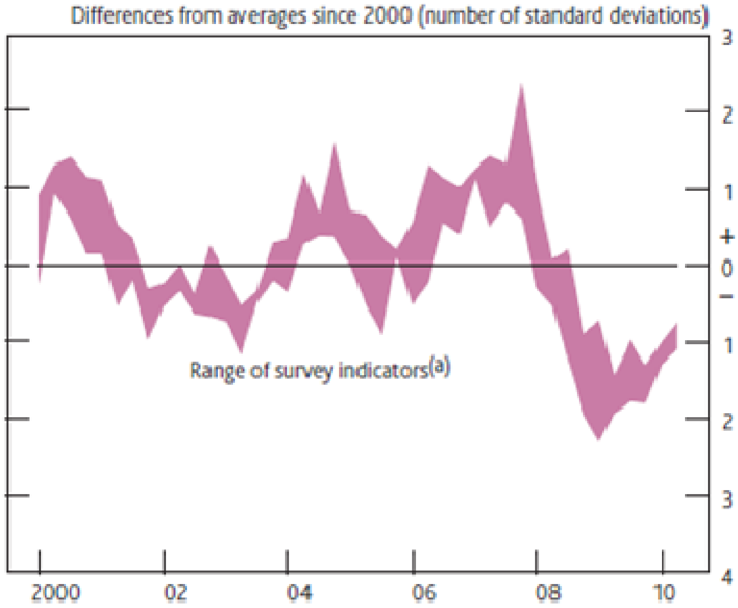
valid reason would be that misalignments could make the eventual task of controlling inflation harder over and above the influence of asset prices at the two-year horizon. But this is the sort of point that the FPC might be expected to address since its remit includes responding to "imbalances, risks and vulnerabilities in the financial system". Certainly, since the MPC has only one instrument, the interest rate, it would have to sacrifice control of inflation at the two-year horizon if it were to allow such considerations to influence its interest rate setting. My view is that policy broadly defined should react to asset price bubbles by policy tightening, but that it is unlikely that the interest rate is the appropriate financial instrument to use for this purpose and therefore this is not likely to be an issue for the MPC.

13. What is your current estimate of the extent of the output gap?

Output may be as much as 10% below the level that it would have been on had the crisis not occurred, but capacity utilisation rates implied by surveys appear to have fallen by less than implied by this fall in demand. This suggests that there has been some decline in the economy's supply capacity. Effective supply capacity is likely to have been impaired by the impact of tight credit conditions. Restricted access to credit may have made it more difficult or expensive for companies to access the working capital required for day-to-day operations. The lower level of investment has reduced growth in the capital stock and in turn supply growth. The increase in company liquidations may have also led to some capital being scrapped as businesses became insolvent, although liquidations rose by much less than in the early 1990s recession.

The output gap is not directly observable, so the extent of the gap is uncertain. The high level of unemployment suggests there is considerable spare capacity in the labour market. Survey evidence also suggests that a significant degree of spare capacity has opened up within companies in the recession as the chart below, taken from the August *Inflation Report*, shows. There are tentative signs that the margin of spare capacity within companies is starting to close as demand recovers, although capacity utilisation remains below historical average rates. The Office for Budget Responsibility suggests the output gap is currently around 4% of GDP – this seems a plausible number although at the same time it is important to remember that all experience shows that contemporary estimates of the output gap are highly uncertain and often subject to substantial revision after the event.

Chart 3.9 Survey measures of capacity utilisation



Sources: Bank of England, BCC, CBI, CBI/PwC and ONS.

(a) Three measures are produced by weighting together surveys from the Bank's Agents (manufacturing and services), the BCC (manufacturing and services) and the CBI (manufacturing, financial services, business/consumer services, distributive trades) using shares in nominal value added. The BCC data are non seasonally adjusted.

14. What do you regard as a sustainable household saving ratio?

The sustainable household savings rate cannot be identified in isolation but depends on what is going on the rest of the economy. Sustainable saving can be defined as the rate of saving thought necessary to deliver future consumption levels in line with people's reasonable expectations. But a high level of business or government saving reduces the need for household saving as is discussed further below.

Saving is probably strongly motivated by a desire for people to provide for old age; the extent of the saving that households need to do to meet their reasonable expectations of consumption in old age depends on other arrangements such as state pensions which exist for old people. But the provision of state pensions to old people has to be financed by young people unless it is properly funded. If the reasonable consumption expectations of both old and young people are to be met, then they should be funded by means of state saving as a complement to household saving. The need for household saving also depends on the way in which those businesses in which savings are invested behave. If they distribute all of their profits to households then households will need to save more than if businesses retain a significant proportion of their profits leading to likely future growth of dividends.

If, which is reasonable, both government and business saving are seen as being conducted on behalf of households, it follows that the key to sustainability is not household saving but national saving, the sum of these components. My own past work suggested that a savings rate net of depreciation of just over ten per cent was needed to ensure that the economy could afford a consumption pattern growing in line with the underlying growth rate of the economy. This contrasted with an actual pre-crisis savings rate in 2005 of under six per cent and the savings rate has fallen since then. These conclusions are inevitably sensitive to assumptions about future rates of return and growth rates as are, indeed, all findings on sustainability. It is also important to remember that extending working lives reduces the need for saving. Nevertheless, the figures do indicate that, pre-crisis, people were living beyond their means or, equally, were at considerable risk at being disappointed by their future living standards.

15. How would you describe the state of the UK labour market at present?

The labour market has stabilised in recent quarters, and there are signs of some recovery in employment in the latest data. According to the Labour Force Survey (LFS), employment rose by 184,000 in the three months to May compared with the three months to March. Unemployment fell by 49,000 over the same period, and the LFS unemployment rate has fallen slightly to 7.8%. Other indicators are consistent with the labour market showing signs of improvement. Workforce Jobs rose slightly in Q1, and claimant count unemployment has been falling gradually since November 2009.

Although unemployment has risen substantially, it has not risen by as much as might have been feared given the fall in output. That is in part because of cuts in hours. But total hours fell by less than in previous recessions. The main factor behind this is that there has been greater flexibility in real wages than has been seen in the past.

The outlook for employment will depend on the strength of the recovery in demand and developments in productivity. Most surveys of employment intentions have improved. And the number of vacancies has increased since late 2009, though it remains well below pre-recession levels. But output per hour, as measured by the ONS, is still 2% below its pre-recession peak despite recent rises. This suggests that there is a real risk that employment will pick up more slowly than private sector output. The fiscal consolidation will also act as a drag on employment: the Office for Budget Responsibility projects that public sector employment will fall by approximately 600,000 between April 2011 and April 2016, with around half of the job losses occurring over the first three years of this period.

CURRICULUM VITAE

Martin Robert Weale

CURRICULUM VITAE **MARTIN ROBERT WEALE**

Dr M.R. Weale (b. 1955) joined the Monetary Policy Committee of the Bank of England in July 2010 after having been the Director of the National Institute of Economic and Social Research since 1995. Before this he was a lecturer in Economics at the University of Cambridge and a Fellow of Clare College (B.A. 1977, Sc.D. 2006) He has researched a large number of aspects of applied economics at both macro and micro-economic levels. He has published his work in many books and journals, including the *Economic Journal*, the *Journal of the Royal Statistical Society, the Journal of Business Economics and Statistics,* the *Journal of Public Economics,* the *Review of Economic Studies* and the *Review of Economics and Statistics*.

Weale was appointed CBE for his services to Economics in 1999 and was elected an Honorary Fellow of the Institute of Actuaries in 2001. City University awarded him an honorary doctorate in 2007. He was a member of the Statistics Commission from 2000 to 2008. In 2006 he was appointed to the Board of Actuarial Standards. As Director of the National Institute he frequently appeared on the broadcast media and was widely referred to in the press. He has made numerous appearances in front of select committees and is used to presenting his work to a variety of different audiences.

1. Personal

Post	External Member, Monetary Policy Committee Bank of England
Date of Birth	4th December 1955

2. University Education and Qualifications

1974-77	Pt1A Maths Tripos, Pt 2 Economics Tripos, Clare College Cambridge.
1977	BA (1st Class Honours, Part 2 Economics Tripos).
2006	Sc. D. in Economics University of Cambridge.

3. Career

1977-79	Overseas Development Institute Fellow, National Statistical Office, Zomba, Malawi.
1979-87	Research Officer, Department of Applied Economics, Cambridge (Junior Research Officer to 1984).
1987-95	University Lecturer, Faculty of Economics and Politics, Cambridge (University Assistant Lecturer to 30.9.90).
1981-95	Director of Studies (to 1992) and Fellow in Economics, Clare College, Cambridge.
1986-87	Houblon-Norman Fellow, Bank of England.
1993	Visiting Scholar, Institute for Empirical Macroeconomics, Federal Reserve Bank, Minneapolis.
1995-2010	Director, National Institute of Economic and Social Research.

4. Honours

1999	C.B.E. for Services to Economics.
2001	Honorary Fellow, Institute of Actuaries.
2007	DSc Honoris Causa, City University.

5. Board Memberships

1990-8	Member. HM Treasury Academic Panel.
1995-7	Member. HM Treasury Panel of Independent Forecasters (the 'Wise Men').
1996-2000	Chairman. National Accounts User Group.
1997-2000	Chairman. ONS Academic Panel.
2000-2008	Member. UK Statistics Commission.
2004-2007	Member. European Advisor Committee on Statistical Information in the Economic and Social Spheres (CEIES).
2005-	Member. Advisory Committee Centre for International Macro-economics and Finance, Cambridge University.
2006-	Member. The Board for Actuarial Standards.
2008-	Chairman. Centre for Measurement of Government Activity Advisory Board. Office for National Statistics.

6. Research Grants

1985 ESRC Studentship jointly with Central Statistical Office. This funded a PhD student who worked on various aspects of data reliability

1986 Houblon-Norman Fellowship Bank of England £11,500 to work on Macroeconomic Policy.

1989 ESRC Research Award (with Drs Feinstein and Solomou) £60,000 to revise estimates of UK National Income 1855-1985.

1991 Nuffield Foundation (with Dr Solomou) £3000 to produce estimates of quarterly national income for Germany 1925-38.

1991 ESRC (with Prof. Cave and Dr Johnes) £8480 to run a study group in the economics of education.

1991 Royal Economic Society, HM Treasury and Department of Education and Science (with Prof. Cave). £8000 to run a conference on the economics of higher education.

1991 Central Statistical Office (with Mr Begg). £22156 to produce estimates of flows in trade credit.

1992 Central Statistical Office (with Messrs Begg and Wright). £25,000 to look at ways of measuring banking output.
1992 Leverhulme Foundation. £20,789 to look at the implications of different ways of deflating GDP on estimates of economic growth.
1993 Central Statistical Office. £41,500 to produce estimates of monthly GDP and new leading indicators. (with Dr Smith and Mr Wright).
1995 ESRC (with Drs Henry and Lee and Professor Pesaran) £205,067 to study aspects of macroeconomic modelling and forecasting using monthly and quarterly data.
1996 ESRC (with Dr Blake) £74,283 to study UK Consumer Spending 1920-1995.
1996 ESRC (with Dr Dutta) £89,385 to study the impact of income uncertainty on consumer behaviour.
1997 ESRC (with Prof Smith) £117,912 to study leading indicators for the United Kingdom.
1997 EUROSTAT €350000 to study co-incident and leading indicators for the European Union
1998 ESRC £80,251 to study inheritance and inequality.
1999 ESRC £549,941(with Messrs Barrell, Pain and Young) to study fluctuations and long-term prosperity
1999 Leverhulme Trust £158,000 (with Ms Metcalf) to study the effects of student fees on universities
1999 ESRC £92,102 to study firms' expectations of output growth.
2000 ESRC £109,400 (with Professor Sefton) to study means testing and early retirement
2000 ESRC £39,626 to study the role of efficiency as an explanation of international income differences
2000 European Commission £124,000 to study flash estimation of quarterly GDP
2001-2002 EUROSTAT. £120,000 to study various aspects of economic data
2002 Inland Revenue £80,000 (with Professor Sefton) to study the influence of taxes on household saving.
2002 European Commission (5th Framework). £109,000 to study ageing and retirement.
2003 European Commission (5th Framework) £111,622 to study demographic uncertainty and the sustainability of welfare systems.
2003 European Commission (6th Framework) £205,595 to study ageing, health status and determinants of health expenditure
2003 Department for Education and Science £169,000 (with Ms Metcalf and Dr Stevens) to study recruitment and retention in higher education.
2003 Department of Health. £135,356 (with Ms O'Mahony) to study measures of productivity in the health service.
2003 European Commission (DG-ECFIN) €50,000 to explore qualitative business surveys
2004 Joseph Rowntree Foundation £34,000 to investigate the interaction between poverty and debt
2004 European Commission (6th Framework) £60,000 to study sustainability of pension systems.
2005 ESRC £45,000 to study qualitative business survey data
2005 ESRC £45,000 to study consumer sentiment data from BHPS.
2005 DWP £100,000 (with Dr van de Ven) to study household debt.

2005 ESRC £210,000 (with Dr van de Ven) to study economic consequences of demographic uncertainty.
2005 EUROSTAT £240,000 (with Dr Mitchell) to study various statistical aspects of short-term economic forecasting.
2006 ESRC £229000 (with Dr Mitchell) to compare individual responses to CBI and ONS business surveys.
2007 ESRC £637000. (with Mr Mason) National Institute component of ESRC Centre for research into life-long learning.
2008 Leverhulme Trust £83,000 The Effects of Decision-making Myopia on Private Provisions for Retirement
2009 Eurostat. €500,000 (with Dr Mitchell). Work on short-term forecasting and nowcasting.

7. Publications

A. Books & Reports

1986

British Banking: 1960-1985. The Macmillan Press Limited.
pp. 232. With the late J. Grady.

1989

Macroeconomic Policy: Inflation Wealth and the Exchange Rate. Unwin Hyman Ltd. pp. 364. With A. Blake, N. Christodoulakis, J. Meade and D. Vines.

1995

The Reconciliation of National Income and Expenditure: Balanced Estimates of United Kingdom National Accounts, 1920-1990. Volume 7 in *Studies in National Income and Expenditure of the United Kingdom.* Cambridge University Press. With J. Sefton.

1999

Review of the Revisions to the Average Earnings Index. Report Submitted by Sir Andrew Turnbull and Mr Mervyn King to the Chancellor of the Exchequer. Published by the House of Commons. HC263.

2003

Pension Reform: Redistribution and Risk. NIESR Occasional Paper No 56. Edited Volume

2008

The Average Earnings Index and Average Weekly Earnings. Report to the National Statistician. Office for National Statistics.
http://www.statistics.gov.uk/downloads/theme_labour/Wealefinalreport.pdf

B. Chapters in edited books

1983

"Deflators in Input-Output Tables" in ***Input-Output Modelling.*** Eds M. Grassini and A. Smyshlyaev, IIASA, pp 525-546.

1984

"Linear Economic Models" in ***Mathematical Models in Economics.*** Ed F. van der Ploeg, pp. 580, John Wiley and Sons Limited, 1984, pp. 37-56.

1988

"The Accounting Framework and the Data". pp. 25-46. With T. Barker.
"Industrial Prices and Profits". pp. 293-310.
"The Company Sector". pp. 389-410. With A. Goudie and G. Meeks .
"Financial Stocks and Returns", pp. 411-432, all in ***The Cambridge Multisectoral Dynamic Model of the British Economy***. Ed T. Barker and A.W.A. Peterson, pp. 507. Cambridge University Press.

1989

"Wealth Targets, Exchange Rate Targets and Macroeconomic Policy". In ***Policy Making with Macroeconomic Models***. Ed. A. Britton, pp. 192-234. Gower Publishing Co. Ltd. With A. Blake and D. Vines.

1990

"Externalities from Education". In ***The Market: Practice and Policy***. Edited by F. Hahn. Macmillan. 1992. Reprinted in ***Recent Developments in the Economics of Education*** edited by G. Johnes and E. Cohn.

1995

"Balanced National Accounts for the United Kingdom, 1920-1990". In *Social Statistics, National Accounts and Economic Analysis, Annali di Statistica, Serie X*. Vol. 5. Ed E. Giovannini. pp. 155-181.

1998

“Measurement Errors and Data Estimation: the Quantification of Survey Data”. In *Applied Economics and Public Policy*. Ed. Begg, I.G. and S.G.B. Henry. Cambridge University Press. Pp. 41-58. With A. Cunningham and R. Smith.

2002

“The Forecasting Performance of the OECD Composite Leading Indicators for France, Germany, Italy and the UK”. In ***A Companion to Economic Forecasting***. Edited M.P. Clements and D.F. Hendry. Basil Blackwell. Oxford. Pp. 386-408.

2003

"State Pensions: Means Testing and Public Choice". In ***Pension Reform: Redistribution and Risk***. NIESR Occasional Paper No 56. Edited M.R. Weale. Pages 68-94. With James Sefton.

2004

"Education and Economic Growth". In ***International Handbook on the Economics of Education***. Ed G. and J. Johnes. Edward Elgar. Cheltenham. Pp. 164-188.

2006

"Survey Expectations". Chapter 14 in ***Handbook of Economic Forecasting***. Ed A. Timmermann and C.W.J. Granger. North-Holland. Pp 715-776. With M.H.Pesaran.

"Prosperity and Productivity" in *Options for a New Britain.*Ed V. Uberoi, A. Coutts, I. McLean and D. Halpern". Palgrave Macmillan. London. Pp 33-50.

C. Articles in Academic Journals

1982

"Trade and Aid Policy Analysis: Use of the Cambridge Growth Project Model". ***Overseas Development Institute Review.*** No 1, pp 50-70. With V. Cable.

1983

"Economic Costs of Sectoral Protection in Britain". ***The World Economy.*** Vol 6, No 4. pp 421-438. With V. Cable.

1984

"Quantity and Price Effects in an Analysis of World Trade Based on an Accounting Matrix". ***Review of Income and Wealth***. No. 1, pp. 85-117.

"The Accounts of the UK Public Sector". ***Three Banks Review***, No. 141. pp. 18-32.

"A Balanced System of National Accounts for the United Kingdom". ***Review of Income and Wealth***. No. 4, pp. 461-486. With T. Barker and F. van der Ploeg.

1985

"Testing Linear Hypotheses on National Account Data". ***Review of Economics and Statistics***. Vol. 67, pp. 685-689.

1986

"Two Populations and their Economies". ***London Papers in Regional Science.*** Vol. 15, pp. 74-89. With R. Stone.

"The Structure of Personal Sector Short-Term Asset Holdings". ***The Manchester School.*** Vol. 54, pp. 141-161.

"Developments in New Keynesian Policy Formation". ***Journal of Economic Dynamics and Control***. Vol. 10, pp. 185-190 With N. Christodoulakis and D. Vines.

1987

"The Stock Exchange in a Macroeconometric Model". ***Economic Modelling.*** Vol. 4, pp. 341-55. With N. Christodoulakis.

1988

"The Reconciliation of Values, Volumes and Prices in the National Accounts". ***Journal of the Royal Statistical Society***, Series A. Vol. 151, pp. 291-221.

"Exchange Rate Targets and Wage Formation". ***National Institute Economic Review***. No. 123, pp. 48-64. With A. Blake.

1990

"Wealth Constraints and Consumer Behaviour". ***Economic Modelling.*** Vol. 7, pp. 165-78.

"Monetary Union and the Balance of Payments". ***Oxford Review of Economic Policy*** Vol. 6, No. 3. With I. Begg.

1991

"Balanced Estimates of UK GDP: 1870-1913". ***Explorations in Economic History.*** Vol. 28, pp. 54-63. With S. Solomou.

"Effective Protection in 1932 in the United Kingdom". ***Economic History Review,*** Vol. 44, pp. 328-338. With M. Kitson and S. Solomou.

1992

"On the Measurement of Well-being". ***World Development***. Vol. 20, No.1, pp. 119-31.With P. Dasgupta.

"Balancing the National Accounts". ***National Institute Economic Review***. No. 135, pp. 86-90.

"Environmental Multipliers from a System of Physical Resource Accounting". ***Structural Change and Economic Dynamics***. Vol. 2, No. 2, pp. 297-313.

"Estimation of Data Measured with Error and Subject to Linear Restrictions". ***Journal of Applied Econometrics***. Vol 7, pp. 167-74.

"Imperfect Competition in an Open Economy". ***Journal of Policy Modelling.*** Vol. 14. No. 5. pp. 599-629. With N. Christodoulakis.

“Financial Benefits of Higher Education: a Comparison of Universities and Polytechnics”. ***Oxford Review of Economic Policy.*** Vol. 8, No. 2, pp.35-47.

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8. Other Public Output

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Frequent appearances at the Treasury Select Committee of the House of Commons