

## CONTENTS

page

DIRECTOR'S REPORT	2
DISSEMINATION AND PUBLIC POLICY	4
RESEARCH IN 2002	
FLASH estimates of GDP in the Euro Area <i>by Martin Weale</i>	6
What determines industrial R&D expenditure in the UK? <i>by Bettina Becker</i>	7
Uncertainty and investment <i>by Joe Byrne and E. Philip Davis</i>	8
Is there a common European business cycle? <i>by James Mitchell</i>	9
Estimation biases arising from workplace surveys <i>by John Forth</i>	10
Intangible investments, spillovers and companies' performance <i>by Michela Vecchi and Mary O'Mahony</i>	11
Means testing <i>by James Sefton</i>	12
Policy choices and the European economies <i>by Ray Barrell</i>	13
Absorptive capacity and international income differences <i>by Philip Stevens</i>	14
Employers' skills requirements <i>by Geoff Mason</i>	15
PUBLICISING INSTITUTE RESEARCH	
Events during 2002	16
Books	18
<i>National Institute Economic Review</i>	19
Other publications	20
Discussion papers	23
The National Institute econometric model	23
SUPPORTERS OF THE INSTITUTE	
Corporate membership	24
Financial supporters	25
FINANCIAL SUMMARY	26
PEOPLE AT THE INSTITUTE	
Institute governors	27
Institute staff	28

## DIRECTOR'S REPORT

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John Flemming has served as Chairman of the Institute's Council of Management since 1996 and it is with great regret that we record his retirement with effect from our Annual General Meeting in November 2002. His involvement as Chairman has been a great asset to the Institute and I have greatly valued his personal support for the past six years.

We are, however, very fortunate that Professor Stephen Nickell has agreed to become our new Chairman. The current President of the Royal Economic Society, he is both an academic of the highest distinction and, as a member of the Monetary Policy Committee, actively engaged in the policy process.

Last year I reported that we had recorded a loss for the first time since 1994/5. I did, however, say that the year 2001/2 was likely to show a modest surplus and I am glad that this has proved in fact to be the case. It is likely that this will continue into the current year despite the effects of low interest rates on our property income. Nevertheless, we cannot afford to be less than vigilant over non-research costs, so as to ensure that as much of our income as possible can be devoted to research. We remain particularly grateful to our Corporate Members and other financial supporters whose help allows us to maintain our financial balance and which also gives us some room to carry out research which does not have specific funding. I should like to record here my very sincere thanks for their support.

Over the year we have further diversified our activities, with support for a PhD student at Imperial College financed by a research contract with the Department of Inland Revenue. This work is related to our own programme of work on household behaviour framed around the analysis of dynamic general equilibrium models in which it is assumed that people plan their life-time spending in the light of rational

expectations of uncertain future income. It will focus specifically on an analysis of the effects of the income tax system and associated tax shelters on household savings behaviour. While most of the research financed by the Institute is inevitably carried out by our own staff, the overall purpose of the Institute is simply to support research; in this particular case finance for a PhD student seemed the most appropriate way of providing this support.

While the many areas in which our work has developed are described in subsequent pages, I should specifically report that, over the past two years, our work on measurement and determinants of productivity growth has gradually expanded from a small-scale operation to a group with two senior staff and three (soon to be four) more junior staff. This reflects the high level of interest in the topic both nationally and throughout the European Union. The group is supported both from projects funded by the UK government and from funding from the European Union.

Our work on economic statistics has also benefited from funding by the European Commission – in this case from its statistical office, EUROSTAT. Over a period of five years we have run a programme of work looking at issues such as short-term forecasting, or 'nowcasting', and identifying the state of the business cycle. This work has obvious benefits for our macroeconomic commentary. For example, we are now able to produce indicators of the state of the business cycle on a regular basis for all of the countries for which we publish forecasts; we expect to produce estimates of cyclically-adjusted budget deficits shortly.

We have also become increasingly involved in European networks of researchers. This will prove important in allowing us to bid for projects under the 6th Framework of the European Commission. This Framework will

provide funding for the medium term to groups of researchers on a much larger scale, but therefore inevitably with fewer projects than were covered by previous arrangements. Given the time needed for the preparation of proposals, it follows that it is important to have appropriate networks in place ahead of any call for bids.

It remains the case that our modelling work is supported by an expanding group of model users (including central banks and finance ministries throughout Europe). However, the most exciting practical development has been building the capacity to explore probability distributions for our forecasts. These are based on stochastic simulations of our model. We expect them to give us the capacity to produce probability ranges for forecasts of variables such as the government current account. Such probability ranges enhance the capacity of users to interpret our forecasts.

As time passes and new opportunities occur, so existing ventures come to an end. The Institute has, since 1988, provided a venue for the meetings of the Clare Group, and the *National Institute Economic Review* has carried the articles produced by the Group every six months. The Group was chaired by our Chairman, John Flemming, and included several other members with a long connection with the Institute, including our former Director Andrew Britton. It was set up in 1977 to provide a voice of moderation in what was then a very bitter and polarised economic debate. In the Spring of 2002 it decided that because of the pressure of academic and other commitments it was no longer possible to keep the group in being; its last article was published in the *National Institute Economic Review* in July 2002. The Institute would like to record its thanks to the members of the group for their contributions to the *Review* over the years and wishes them well in the future.



Philip Stevens, Research Officer, who was awarded his DPhil in Economics this year from the University of Oxford.



New staff from top left, clockwise, Justin van de Ven, Patricia Oliver, Lubo Schmidt, Amanda Choy, Kate Robinson, Olga Pomerantz and Kostas Mouritadis.

## DISSEMINATION AND PUBLIC POLICY

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The National Institute of Economic and Social Research continued to feature strongly in the policy debate during 2002. In April, the Institute's forecast for the UK economy attracted a great deal of media attention. Economics commentators reported widely on the concerns of a looming fiscal deficit as raised by the Institute's forecasting team. Readers will now be aware that an analysis, which could have been viewed as rather pessimistic at the time, was vindicated later in the year during the Chancellor's pre-Budget statement in November. Press reaction following the publication of our April forecast for the UK economy included the following:

"Gordon Brown's Budget has helped open a £15bn black hole in the government's finances which will require the equivalent of a 5p rise on the basic rate of income tax to close, a leading economic think-tank warns today" (*The Guardian*, 1 May 2002)

"The National Institute of Economic and Social Research said the Budget's forecasts for economic growth were too optimistic, meaning tax revenues would come in below the Government's expectations." (*The Independent*, 1 May 2002)

"In fact, [the supposedly Labour-controlled Treasury Select Committee's] central concern, that if growth does not reach the optimistic levels assumed by the Treasury, tax will have to rise by even more than Mr Brown has already announced, was echoed on the very same day by the National Institute of Economic and Social Research ... [a] body whose independence no one doubts." (*The Daily Telegraph*, 2 May 2002)

The National Institute is, of course, well known for its economic forecasts and its fiscal projections. Although these are important aspects of our work it would be incorrect to think that staff limited themselves to this type of research during 2002. A number of issues which were

equally high on the public agenda were central to NIESR's activities during the course of the year.

In October researchers considered the living costs of public sector workers in London as part of an continuing analysis of the London Economy sponsored by the London Chamber of Commerce.

"[A] survey by the National Institute of Economic and Social Research warns that 60,000 of the frontline public sector workers will be driven out of London in the next 10 years by rising house prices." (*Evening Standard*, 14 October 2002)

Our research attracts the attention of those involved in the decision making process because of its renowned credibility and substance. NIESR is often described in the media as "independent", "respected" and "influential" and these qualities are central to our researchers' work. Our aim is not to have a reputation based on insubstantial sound bites that lack serious substance but to strengthen our influence by being considered the premier high quality economics research organisation in the UK.

An area of research which attracted particular attention during the year and, as our Director mentioned in his review of the year, grew in significance for the Institute as a whole, was our analysis of productivity growth. As well as undertaking a number of research projects in this area, members of staff have been asked to give evidence to parliamentary committees and our work has been cited on numerous occasions during parliamentary debates. Productivity efficiency is, of course, one of the issues which the Government believes to be fundamental to a healthy economy. NIESR is therefore delighted to be at the forefront in the provision of high quality research into how UK productivity levels, in both the service and non-service sectors, can be improved.

Indeed, in November, members of our staff whose research expertise lies in the area of productivity analysis joined leading academics from universities around the UK at a NIESR organised conference entitled 'Productivity and Performance in the Provision of Public Services'. This succeeded in its aim to provide a forum for academics, policymakers and business people to discuss the highly topical and policy-relevant issues involved. NIESR excels in the provision of this type of forum – fully utilising its ability to bridge the gap between high quality academic research and the business and policymaking community.

Particularly worthy of mention in this summary of our activities during the year are some of NIESR's collaborative ventures. As our Director says in his reflections, we are keen to build up links with other organisations in order to share and benefit from our various strengths. It is therefore gratifying to report that we have done this to great effect in 2002.

The Sir Richard Stone Lecture series continued in partnership with Cambridge University Press when Professor Danny Quah presented 'Growth and Distribution'. We are particularly glad that the Bank of England has agreed to host the lecture on a regular basis. The Bank also hosted a lecture by Robert R. Glauber in November on 'Restoring Investor Confidence'. Both events attracted a high level audience from the business community and policymakers. We are very grateful to the Bank of England for its hospitality and help in organising these events.

Following the highly successful first series of the Westminster Economic Forum on 'The economics of population change', the ESRC kindly agreed to sponsor a further series of events. During 2002/3 we are joining forces to organise a series of seminars which are concentrating on the topic of 'Risk'. We are very pleased to have the opportunity to expand our interests and influence in this way and hope that

the Forum will continue to go from strength to strength. We would also like to take the opportunity to thank Martin Hamblin GfK and the Local Government Association who helped to develop the Forum by hosting events during 2002.

In reflecting on our activities during the past year we must not forget to acknowledge the help given by our Governors, Corporate Members and financial supporters. We are grateful to have been able to draw on their breadth and level of academic knowledge and business experience at our seminars and conferences during 2002. Their contribution has greatly enhanced our events. We would like to express our appreciation to our Governors – Professor Richard Blundell, Sir Brian Corby, The Rt Hon Frank Field, MP, Lord Haskins, Sir Nicholas Monck and Dr Sushil Wadhvani – who have all contributed significantly to our activities during the year. However it would be wrong not to extend this gratitude to all those who have given their time to help NIESR with its various research projects, events and and publications during what has been another highly successful year for the Institute.

FOR FURTHER INFORMATION ON ANY OF NIESR'S ACTIVITIES PLEASE CONTACT THE SECRETARY, GILL CLISHAM. E-MAIL: G.CLISHAM@NIESR.AC.UK

## FLASH ESTIMATION OF GDP IN THE EURO AREA

*The National Institute has been leading the FLASH project funded under the Fifth Framework of the European Commission designed to find ways of producing early estimates of GDP. The other members of the consortium are the Belgium National Bank, the Deutsches Institut für Wirtschaftsforschung (DIW), the Joint Research Centre (an EC body) and ISTAT, the Italian Statistics Office. The results presented for the Euro Area described here were the outcome of work by Frau Rietzler at DIW.*

The United Kingdom produces its first estimate of GDP growth at about twenty-five days after the end of each quarter. Even this is anticipated by the service provided by the National Institute which produces an estimate based on analysis of monthly data at about six days after the end of the quarter. But the production of data for many countries of the European Union is a much slower process and the consequence is that, at present, estimates for the Euro Area are made available only about sixty-five to seventy days after the end of each quarter.

The FLASH project was intended to explore how far it was possible to produce estimates of GDP growth derived from the application of statistical techniques to existing publicly available data, well in advance of official estimates. A specific goal was to explore the production of flash estimates for the Euro Area at forty-five days after the end of each quarter. The project has also produced software designed to facilitate the production of flash estimates by national statistical offices.

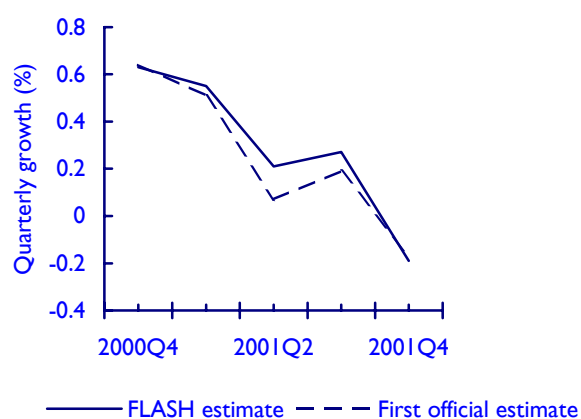
The performance of flash estimates at national and European levels depends on the mix and timing of data availability and also, at least to some extent, on the way in which statistics offices compile their data. A fairly general conclusion from the project was that it was possible to use the statistical relationship between appropriate indicators and GDP growth to

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produce early estimates of GDP growth; these were typically much more accurate than those generated by alternatives such as autoregressive models which neglected current information. It was, however, not clear that, without further disaggregation, they would be accurate enough to merit publication by national offices.

For the Euro Area, however, it is possible to take advantage of the fact that, for both Germany and Italy, estimates exist at forty-five days and to use these, in conjunction with industrial production data for some other countries, to produce flash estimates of GDP growth. The chart below shows the out-of-sample performance of the model the project produced. Since this work was done EUROSTAT has set up a very similar model and tested it out of sample for 2002Q1 and 2002Q2. The good performance is confirmed, and we expect that EUROSTAT will use the output of this project to produce early estimates of GDP growth in the Euro Area on a regular basis.

Early estimates of Euro Area GDP





## WHAT DETERMINES INDUSTRIAL R&D EXPENDITURE IN THE UK?

*The importance of technological change for a country's long-run rate of economic growth has received increasing attention from researchers and policymakers over the past decade. A key determinant of technological change is knowledge accumulation through expenditure on research and development. Recognition of the potential importance of R&D for long-run growth and living standards matters for the UK, where R&D intensity in the business sector declined consistently in the 1990s, contributing to a widening of the gap to major competitors. The Government has introduced an R&D tax credit with effect from the 2002 fiscal year. Up to that point direct government support for R&D was primarily limited to the provision of funds to finance some R&D activities in private industry. The NIESR research tries and identifies some of the factors behind the comparatively poor R&D performance of the UK in the 1990s.*

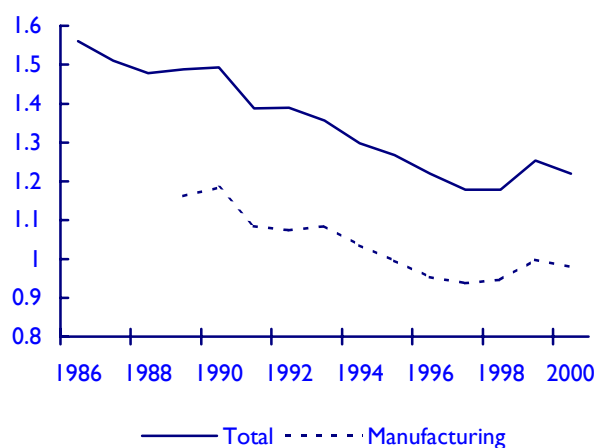
Despite the renewed importance now attached to R&D, relatively little is known about the determinants of R&D expenditures at an industry or economy-wide level, either in the UK or in most of the other major industrialised economies. The majority of the existing literature uses firm-level data. We undertake a detailed survey of the existing literature, which highlights a number of factors that may however be important, and draw on this to estimate the determinants of R&D expenditure in a panel of UK manufacturing industries, where the majority of business R&D occurs. There are five main types of determinants which we identify both in the existing literature and in our empirical analysis. These can be broadly categorised as specific firm/industry characteristics, product market competition, public policies, endowment and location, plus a residual category that includes spillovers from other sectors and support by foreign funds.

Using a panel data model for eleven broad manufacturing industry groups over the period 1993–2000, we do indeed find a significant

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impact of many of these factors. Fluctuations in output and profits are identified as key short-term determinants of variation in UK R&D. Provisional results suggest that the main explanations for the low level of R&D during the 1990s as a whole appear to be weak output growth, the declining level of government funding for private industry and the appreciation in the real effective exchange rate since 1996. We provide some evidence that the latter may reflect increasing financial pressures on companies, having led UK exporters to cut their profit margins on exports to almost zero. Taken together, these factors have largely outweighed the stimulus being offered by the decline in long-term interest rates during the 1990s, the growing share of R&D expenditure being undertaken by foreign-owned firms, the rising level of competition in product markets as well as the increase in skilled labour employed on R&D since 1996.

UK R&D intensity in the business sector (expenditure on R&D as per cent of UK GDP)



## UNCERTAINTY AND INVESTMENT

*Economic uncertainty is important for policy-makers. Whilst assessing the benefits of UK membership of the Euro Area the Chancellor will consider, amongst other things, the impact of exchange rate volatility on business investment. We find formal statistical evidence of a negative relationship between uncertainty and investment for the main European countries, including the UK.*

The determinants of investment have typically been considered in the context of theories which emphasise the level of output, of interest rates and of the stock market. More recently arguments have been advanced which suggest uncertainty of these determinants is equally important for business investment. In particular, variability of the factors which determine future profits encourage firms to wait and see before engaging in investment expenditure, hence discouraging current business spending. This emphasises that it is variability of macroeconomic factors which impact upon investment.

This is an interesting issue for UK membership of the Euro Area, since monetary union implies fixed exchange rates with the UK's major trading partners which should reduce uncertainty for trade and hence encourage investment. The

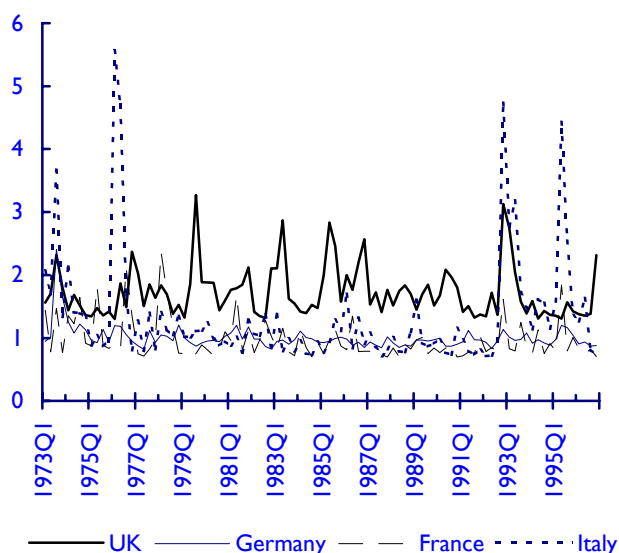
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patterns of trade-weighted exchange rate volatility for our countries are displayed in the chart, and membership of the euro would ameliorate much of this volatility. Nevertheless, whether this matters for investment is a contentious issue: some researchers have emphasised asymmetric behaviour between the UK, France and Germany in terms of the economic costs of exchange rate volatility. There may be some return from further empirical evidence.

We use recently developed panel econometrics methods to examine the impact of the variability of macroeconomic aggregates on investment. Panel estimation, which involves a degree of pooling countries in empirical estimation, has the advantage of greater accuracy due to combining more information. This analysis is often predicated on the pooled countries displaying similar long-run behaviour: biases can arise in panel estimation when the countries are mistakenly grouped together. Our approach is also interesting because it allows us formally to test the differences between countries.

Using aggregate economy data we find formal statistical evidence of a negative long-run relationship between the volatility of a trade-weighted exchange rate index and business investment. Additionally, we find evidence that the UK is like the main European countries with regard to the impact of exchange uncertainty on investment. There was little evidence that the variability of other macroeconomic factors mattered, apart from some evidence on the long-run interest rate – there are reasons to believe that the Euro Area will lead to more integrated bond markets and this will also encourage stability.

Exchange rate volatility in Europe (1973–1996)





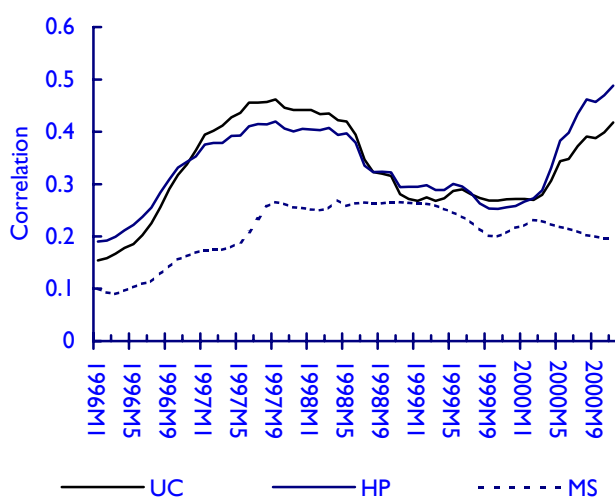
## IS THERE A COMMON EUROPEAN BUSINESS CYCLE?

*A common European business cycle is seen widely as a prerequisite for the successful operation of a common monetary policy in Europe. There remains, however, considerable controversy over how to measure the business cycle. New work at the National Institute, supported by EUROSTAT, finds that, since 1996, European business cycles, however measured, have become more synchronised. This is consistent with the emergence of a 'common' European business cycle in the run-up to EMU.*

There are many alternative ways to measure the business cycle. One approach is to decompose GDP, the preferred measure of 'aggregate economic activity', into trend and cyclical components. The cyclical component is commonly referred to as the 'growth' business cycle. But it has not been resolved how we should undertake this decomposition; many alternative parametric and non-parametric approaches have been suggested. Importantly, empirical inference about the business cycle has been found to be sensitive to the approach used.

An alternative approach rejects the concept of a trend-cycle decomposition, and in line with the NBER, defines the 'classical' business cycle in terms of the turning points of the level of GDP.

**Size-weighted average correlation between the business cycles of the 12 Eurozone economies for selected measures of the business cycle**



THIS RESEARCH WAS SUPPORTED BY EUROSTAT AND CARRIED OUT BY JAMES MITCHELL. J.MITCHELL@NIESR.AC.UK

Again there are parametric and non-parametric approaches to measuring the classical business cycles.

In this project we take an eclectic approach. We consider a range of parametric and non-parametric measures of both the 'growth' and 'classical' business cycle. Using 40 years of monthly industrial production data (1962m1–2002m5) we examine the relationship between the business cycles of the 12 current Eurozone countries. In the absence of such a long time-series of data for GDP, the use of industrial production data is motivated by the historically close relationship between industrial production and GDP.

Despite inference about individual European business cycles being sensitive to the measure of the business cycle used, we find evidence of an emerging common European business cycle, across the alternative measures. Without forecasting, it is, of course, too early to tell whether these trends will continue.

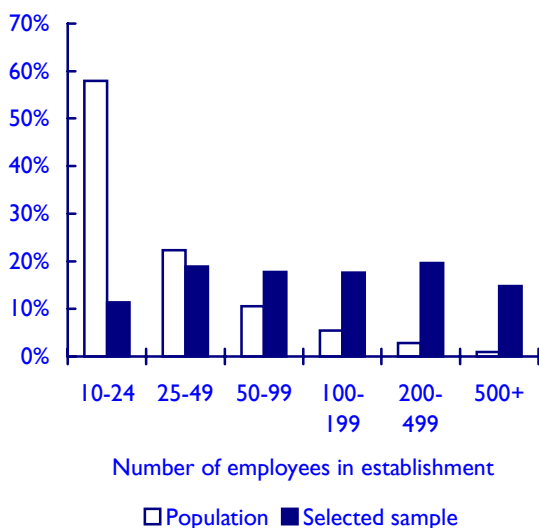
Our results indicate that the size-weighted average correlation between European business cycles has been, in general, increasing since 1996. For selected measures of the business cycle, the figure plots the average correlation for a series of rolling windows of width 36 months. Results are centered on the mid-point of each window. The measures of the business considered in the figure are an 'unobserved components' growth cycle (UC), a Hodrick-Prescott growth cycle (HP) and a measure of the classical business cycle obtained by estimating a two-state Markov-switching (MS) model with time-varying transition probabilities.

## ESTIMATION BIASES ARISING FROM WORKPLACE SURVEYS

*Much of the research based on data from sample surveys of workplaces or organisations reports multivariate statistical analyses which do not take full account of the complexity of the sample design. This can lead to biases in regression coefficients and their associated standard errors. Research at the National Institute has explored the pertinence of these issues in the analysis of the influential Workplace Industrial Relations Survey (WIRS) series. The research finds evidence of estimation biases in a selection of influential pieces of published research based on the WIRS surveys. It concludes that such biases may have led researchers unwittingly to make erroneous conclusions on some of the key questions in employment relations.*

The surveys that comprise the WIRS series incorporate a number of departures from the principle of simple random sampling on which most standard statistical formulae are based. The most significant among these is the use of disproportionate stratified sampling, in which the probability of inclusion in the sample varies according to an establishment's size and industrial activity (see below). If one does not properly account for such departures from simple random sampling in statistical analysis, one is liable to obtain model coefficients that are

**Sample selection bias (1998 Workplace Employee Relations Survey)**



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subject to sample bias. One may also over-estimate the statistical significance of any relationships that are found (so-called Type I errors).

In the case of WIRS, one consequence of a failure to account for the variation in sample selection probabilities is that results for the 'average workplace' will place too much emphasis upon the relationships that exist among larger establishments and too little emphasis on those pertaining among smaller ones. Yet it is smaller workplaces which dominate the population.

As part of our research, we replicated a small number of influential studies based on WIRS data and examined the sensitivity of their results to the features of the WIRS sample design. We identified two examples in which the negative effects of trade unions (on employment levels and financial performance) were smaller than previously estimated once proper account had been taken of the complex sample design. These findings indicate that the impact of trade unions varies across workplaces of different sizes, perhaps even being positive among smaller workplaces.

The findings from the research emphasise the importance of taking the complex sample design into account when conducting multivariate statistical analysis of workplace surveys. They also emphasise the need for more disaggregated analysis that explores the heterogeneity in the relationship between employment practices and workplace performance across different types of establishment.

## INTANGIBLE INVESTMENTS, SPILLOVERS AND COMPANIES' PERFORMANCE

*The importance of intangible assets, such as R&D and human capital investments, for economic performance has been emphasised in the economics literature. However, data limitations have often led to partial evaluations of the impact of intangibles on productivity. The main contribution of this research is to integrate the standard analysis based on company accounts data with industry measures of investment in knowledge generating activities in an attempt to gain insight into the mechanisms through which intangibles impact on company performance. Industry level information is derived from two newly developed taxonomies, an industry and a skill taxonomy, that allow a highly refined classification of companies into clusters, according to their intensity in the use of human capital and R&D. The analysis was based on a sample of 7000 companies in five countries, including both manufacturing and non-manufacturing sectors.*

Our results show the importance of R&D capital in affecting productivity, in accordance with the existing literature. Extending the investigation to companies operating in the retail and service sectors provides new evidence of the relationship between R&D and productivity in non-manufacturing. The introduction of industry taxonomies in the analysis adds to our understanding of the relationship between intangibles and productivity. In particular the results can be interpreted as evidence of the presence of R&D spillovers, while, at the same

THIS RESEARCH WAS CARRIED OUT BY MICHELA VECCHI AND MARY O'MAHONY. ENQUIRIES TO M.VECCHI@NIESR.AC.UK OR M.OMAHONY@NIESR.AC.UK.

time, controlling for the impact of the skill level that typically characterises the industry in which the company operates. The estimated R&D spillover coefficients, shown in the table below, depict the extent to which being located in an R&D intensive industry adds to firm productivity above any impact from its private investment in innovative activities. Our results show significant impacts come mainly from manufacturing companies and/or firms operating in the USA and in Japan. This suggests that there might be constraints to the diffusion of knowledge in Europe, which could prevent companies from reaping the full benefits from an increasingly R&D/skill intensive environment.

Our analysis has considered one possible source of spillovers and it does not exclude the presence of other channels through which knowledge can spread across companies.

### The impact of R&D spillovers on total factor productivity

	Total sample	Manufacturing	Non-manufacturing	USA	Japan	Europe
R&D & high skill	0.037* (0.006)	0.043* (0.008)	0.005 (0.011)	0.029* (0.014)	0.049* (0.006)	0.024 (0.016)
Other R&D	0.030* (0.008)	0.027* (0.009)	-0.104 (0.106)	0.021 (0.017)	0.053* (0.010)	0.002 (0.022)
Standard errors in parentheses, * denotes significant at the 95% level						

## MEANS TESTING

*The current UK Government is committed to the means testing of pension benefits. Since Gordon Brown's pledge in his first Comprehensive Spending Review, the gap between the level of the basic pension and income support (now called the Minimum Income Guarantee) for a single pensioner has risen from below £5 to £23. The Government's motive for increasing its reliance on means-testing is obvious; it promises a way of ensuring that everyone has an adequate income at the same time as controlling costs by reducing eligibility to benefits. However this dependence on means-testing introduces incentive traps into the tax and benefit system which could both increase reliance on benefits in the long run and exacerbate the problems of early retirement. The aim of this project is to both analyse theoretically these economic incentives, and to assess quantitatively their importance.*

In the first piece of work from this project, we found that the redistributive benefits of moderate levels of means-testing could far outweigh the economic costs in terms of reduced labour supply, or as Patrick Minford put it in the *Daily Telegraph* on 1 July 2002, "there is such a political demand within each generation to subsidise less well-off pensioners that people will put up with a much less efficient economy to achieve it". Further, we found that an increasing dependence on means-testing could actually increase the aggregate savings rate; for the extra saving of the rich more than compensated for the reduced saving of the poor.

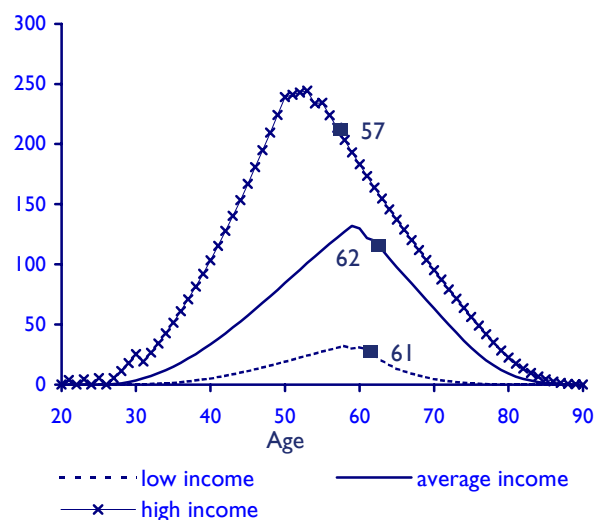
In an empirical piece, we analysed the behaviour of individuals around retirement age as recorded in a number of recent surveys. We were interested in whether the evidence suggested that people planned their early retirement, or whether it appeared to be a reaction to unexpected events. Perhaps unsurprisingly, we found that the evidence suggested that those on high incomes planned their retirement. Further, it was those with higher levels of wealth that were more likely to retire. In contrast the story for those on low

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incomes was different. Those with private pensions, occupational or personal, seemed better able to sustain consumption levels into retirement, whereas for those without pensions it appeared that their retirement was forced by events, in most cases a loss of a job rather than a decline in health.

The final part of the project aims to model economically the retirement decision. The approach is based on the new research area of solving stochastic dynamic equilibrium models. It provides a consistent method of analysing how changes to policy, particularly social security benefits, could affect people's decision to retire. In preliminary work, we found that increasing the degree of means-testing of pension benefits could cause those on low incomes to retire sometimes as much as three to four years earlier. With the Government concerned about the increase in the number of people retiring early, there is likely to be considerable interest in this work.

Wealth (highlighted points identify age at retirement)



## POLICY CHOICES AND THE EUROPEAN ECONOMIES

*The past twenty years have seen a gradual move away from discretionary monetary policy and fiscal policy towards longer-term commitments to fiscal policy rules and to independent Central Banks for monetary policy. This shift reflects three features of the economy.*

- *There is little that short-term stabilisation policy using monetary and fiscal policy can do to fine-tune output.*
- *There is little the Government can do with monetary and fiscal policy directly to raise the productive capacity of the economy.*
- *The expected volatility of economic variables will affect the level of output and governments can raise output mainly by assuring decision-makers that they will live in a more stable environment.*

It is possible to reduce the volatility of the economy by designing institutions that have more credibility than that available to a government caught in a four-year electoral cycle. Institute research has helped in the design of both fiscal and monetary institutions in Europe, using stochastic simulations on the NiGEM model to replicate a large number of ‘future histories’ and evaluate which rules fare better in stabilising these hypothetical futures. Recent papers\* have looked at the role of ‘automatic stabilisers’ for fiscal policy and found that they are relatively weak. Strengthening stabilisers would generally mean higher marginal tax rates and higher levels of unemployment benefit, and neither are seen as good on micro-economic grounds. Hence it is important to build fiscal frameworks that leave the maximum room for current stabilisers. The UK’s new fiscal rules may do this, but the Euro Area’s Stability and Growth Pact appears to be reducing desirable flexibility in response to a slowdown in world activity.

Other papers have looked at the choice of rules when we are not certain about the structure of the world. Governments should be interested in

\*SEE BARRELL, HURST AND PINA ON PAGE 20 OF THIS REPORT. ENQUIRIES TO R.BARRELL@NIESR.AC.UK

setting up robust institutions that cope well and absorb uncertainty whatever the true description of the world we live in. In one study we looked at the role of labour market institutions and the choice of policy rules, and concluded that labour market reforms would not cause the ECB to change its targets, but that they might lead it to loosen policy. In a second study we explored different descriptions of consumer behaviour in Europe, and concluded that the ECB’s ‘two pillar’ strategy was relatively robust, although while the UK’s choice of inflation targeting might be appropriate now, if the world changed it might only be appropriate if output variability in the short term is the sole object of policy. Our results on the choice of policy targeting regimes can be summarised in the table below.

### Choosing monetary rules in different worlds: the importance of consumption behaviour

Variables whose volatility is of interest when choosing rules	Some convergence in core Europe UK different	Consumption behaviour the same everywhere
<i>Euro Area</i>		
Output	Nominal	Two pillars
Inflation	Nominal	Nominal
Price level	Two pillars	Two pillars
Output and inflation	Nominal	Nominal
Output, inflation and price level	Two pillars	Nominal
<i>UK</i>		
Output	Inflation	Nominal
Inflation	Two pillars	Nominal
Price level	Two pillars	Two pillars
Output and inflation	Two pillars	Nominal
Output, inflation and price level	Two pillars	Nominal

Notes: Nominal: Targeting Nominal GDP, Two Pillars: the ECB strategy, Inflation: The Bank of England Strategy



## ABSORPTIVE CAPACITY AND INTERNATIONAL INCOME DIFFERENCES

*The ability of a country to absorb new technology is influenced by its human capital and, to a lesser extent, the R&D it undertakes. This is one of the conclusions of a study of nine manufacturing industries in twelve OECD countries between 1973 and 1991. This analysis was conducted as part of a study into the role of efficiency as an explanation of international income differences, financed by the ESRC.*

Absorptive capacity captures the idea that countries may differ in their effort and ability to adopt new technologies even if knowledge is global. This study indicates that differences in absorptive capacity help to explain cross-country differences in the level of productivity.

We examine the effect of human capital and research and development (R&D), as determinants of absorptive capacity, on the efficiency with which countries use frontier technology using Stochastic Frontier Analysis (SFA). SFA allows the study of absorptive capacity in a framework that closely matches the idea of a technical frontier found in growth theory. In our framework, each industry faces the same production frontier – the maximum output for a given level of inputs. Differences in the level of absorptive capacity help explain deviations from this frontier through differences in efficiency.

We find from this study that there is strong evidence that countries differ in the efficiency with which they use frontier technology. The

THE RESULTS OF THIS RESEARCH ARE PRESENTED IN NIESR DISCUSSION PAPER NO. 202: SEE PAGE 23 OF THIS REPORT. ENQUIRIES TO P.STEVENS@NIESR.AC.UK.

implied assumption of previous work that countries are efficient in their use of frontier technology does not receive empirical support. Human capital plays a significant and quantitatively important role in explaining these differences in efficiency. There is also clear evidence that human capital affects production both directly and through an effect on productivity.

The results of this research also lead us to conclude that the effect of R&D on production is primarily through its contribution to the stock of frontier knowledge in each industry. R&D is found to have only a quantitatively small effect on efficiency and is not robust to all changes in specification. Spillovers from R&D on efficiency are not important for explaining differences in efficiency. R&D creates knowledge rather than aiding its dissemination.

Our results suggest that the UK has significantly increased the efficiency with which it absorbs and utilises frontier technology in basis metals and the chemicals industries, but has experienced a decline in the efficiency of its non-metallic mineral product and 'other' manufacturing industries.

### UK Summary

Efficiency	BMI	CHE	FOD	MEQ	MNM	MOT	PAP	TEX
<i>Average</i>	0.60	0.63	0.94	0.79	0.80	0.72	0.86	0.70
<i>1973</i>	0.55	0.59	0.94	0.83	0.87	0.85	0.91	0.69
<i>1991</i>	0.82	0.76	0.94	0.83	0.72	0.62	0.89	0.69

Note: BMI = basis metal industries; CHE = chemicals etc; FOD = food, beverages and tobacco; MEQ = machinery & equipment; MNM = non-metallic mineral products; MOT = other manufacture industries; PAP = paper products; TEX = textiles, wearing apparel; WOD = wood products.



## EMPLOYERS' SKILLS REQUIREMENTS

*During 2002 NIESR researchers have been involved in a joint project with the Institute for Employment Research at the University of Warwick, which has undertaken a number of in-depth analyses of the 2001 and 1999 Employers Skill Survey (ESS) datasets.*

ESS 2001 was an establishment-level survey of employers consisting of a total of 27,003 telephone interviews across all sectors and all size bands. It was commissioned by the Department for Education and Skills (DfES) and followed an earlier large-scale survey which was carried out to support the work of the National Skills Task Force (NSTF) in 1999.

These two surveys have contributed substantially to the evidence base required by the DfES, the Learning and Skills Council (LSC) and the new Sector Skills Councils (SSCs) in their efforts to achieve a better match between the skills and knowledge delivered by the education and training system and the skills and knowledge required by employers. In particular, these surveys have gathered systematic information on skills deficiencies which clearly distinguishes between external skill shortages (skill-related external recruitment difficulties) and internal skill gaps among companies' existing employees. Previous surveys of employers had tended to conflate these two different kinds of skills deficiency.

The research carried out for this project covered the following areas:

- an assessment of the reliability and robustness of ESS data;
- a review of the advantages and disadvantages of different measures of skill deficiencies in ESS;
- a series of statistical reports aimed at providing the new 'Trailblazer' SSCs with relevant labour market information;
- an analysis of the persistence of skill deficiencies between 1999 and 2001;
- the development of a new typology of sectors

RESEARCH WAS CARRIED OUT BY GEOFF MASON, JOHN FORTH AND PHILIP STEVENS AT NIESR AND A TEAM LED BY ROB WILSON AT IER. THE INITIAL FINDINGS WILL BE PUBLISHED IN A DFES RESEARCH REPORT. ENQUIRIES TO G.MASON@NIESR.AC.UK.

on the basis of their skill requirements and reported skill deficiencies;

- a study of the links between qualifications and skill deficiencies;
- an analysis of the main determinants of skill deficiencies in key occupations;
- an analysis of the main determinants of off-the-job training activity.

The NIESR/IER report concludes with a detailed review of the utility of key ESS questions and makes recommendations for some redesign of the questionnaire in order to better meet the information requirements of the main current users of the survey data such as the LSC, the SSCs and the Regional Development Agencies.

### Sectors most seriously affected by external skill shortages

*% of establishments reporting external skill shortages in 2001*

Computer services	15.9
Architectural and engineering activities and related technical consultancy; technical testing, analysis	15.1
General secondary education	12.9
Electrical, electronic and instrument engineering	10.5
Transport services	10.0
Legal, accounting, auditing, business and management consultancy, etc.	9.2
Building installation, building completion and other construction activities	9.0
Higher education, adult education and other education	8.9
Fabricated metal products	8.4
Building of complete constructions; civil engineering	8.3
Hotels, motels and other accommodation	7.4
Human health activities	7.3

Source: Employers Skill Survey 2001 (refers to establishments with five or more employees)

## EVENTS DURING 2002

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### PRODUCTIVITY AND PERFORMANCE IN THE PROVISION OF PUBLIC SERVICES

In November the National Institute organised a major one-day conference on productivity and performance in the provision of public services. The conference, which was held at the British Academy, considered the importance of having accurate measures of public sector performance. It examined the relative performance of producing units (e.g. hospitals, local authorities) against each other, such as by using the techniques of frontier analysis. Then it looked at broad sector aggregates (e.g. health, education, total public services), evaluating performance across time or in Britain relative to our major competitors. Papers were presented on applications of measurement techniques to a range of public services including health, general education, higher education and local authority service provision.



NIESR conference on Productivity and Performance at the British Academy.

### THE ROLE OF EFFICIENCY AS AN EXPLANATION OF INTERNATIONAL INCOME DIFFERENCES

This September conference was based on a research project being conducted by NIESR, funded by the ESRC. The project is conducting a cross-national study using macroeconomic data to explore the role of economic efficiency associated with an inability to make the best use of available technology as an explanation of international income differences.

### THE SIR RICHARD STONE LECTURE SERIES

In July the Bank of England and the National Institute hosted the continuation of the annual lecture series jointly organised by NIESR and Cambridge University Press. The Sir Richard Stone Lectures are given by the world's leading academic economists. We were delighted that Professor Danny Quah, Professor of Economics at the London School of Economics, agreed to present *growth and distribution* at two lectures on consecutive days, giving a more technical version of his presentation at the National Institute.

### THE WESTMINSTER ECONOMICS FORUM

The highly successful series organised by the National Institute and the ESRC continued at the beginning of 2002 with lunchtime seminars on 'The economics of population change'. Professor Richard Blundell spoke on 'Pension incentives and the pattern of retirement in the UK' and this series culminated with a presentation by the Rt Hon Frank Field, MP on stakeholder pensions and a dinner at the House of Commons.



Paul Wallace, Professor David Webb, Frances Cairncross and Dr Michael Orszag at a Westminster Economics Forum seminar held at the National Institute.

Following on from this the Forum resumed later in 2002 with a second series of seminars on the subject of risk. At the first seminar, Professor David Webb of the London School of Economics presented 'Is financial risk different?' at NIESR. Dr Michael Orszag of Watson Wyatt

LLP acted as discussant and, as with the other WEF seminars, Frances Cairncross, Chair of the ESRC, chaired the meeting. The forum continues in 2003 with seminars on environmental risk and aspects of corporate risk.

#### **BRITISH BUSINESS AND THE EURO**

This major one-day conference held in February was jointly organised with CEPII (Centre d'Études Prospectives et d'Informations Internationales) with the support of CDC IXIS Capital Markets, and was held at the Oxford and Cambridge Club in London. The first session looked at macroeconomic aspects of UK integration into the Eurozone and speakers included Patrick Minford of Cardiff Business School. The second session covered EMU and Britain as a location of economic activity: the attractiveness of London and Britain for investment in finance and industry regulatory issues and EMU membership.



Dr Jurgen Pfister (Commerzbank AG), Eric Channey (Morgan Stanley), Anthony Orsatelli (CDC Ixis Capital Markets), François David (Coface) and Vincent Cable, MP at the conference on 'British Business and the Euro'.

#### **RESTORING INVESTOR CONFIDENCE: TRANSPARENCY AND ENFORCEMENT AFTER ENRON**

At this seminar organised by NIESR and held at the Bank of England, Robert R. Glauber, Chairman and Chief Executive Officer of NASD Inc, the largest self-regulatory body in the securities industry and the leading private-sector provider of financial regulatory services in the world, discussed regulation of the financial services sector. The seminar was chaired by Sir Brian Corby, President of the Institute.

#### **GOVERNORS' SEMINARS**

The Institute continued its series of seminars given by members of its Board of Governors, including a presentation by Dr Sushil Wadhvani on *the Monetary Policy Committee: some further challenges*. These seminars are informal events at which fellow Governors and Institute supporters are particularly welcome.



Mary O'Mahony, Senior Research Fellow at NIESR, who presented some of her research findings to a Members' Forum meeting in 2002.

#### **MEMBERS' FORUM SEMINARS**

This series of regular seminars is designed to provide the Institute Corporate Members with in-depth presentations of current Institute research and allow for face-to-face discussion. These included a presentation by Nigel Pain on *fixed investment in the UK: determinants and constraints* and another by Mary O'Mahony on *productivity in the new economy*. In addition the Institute hosted the bi-annual Members' Forum forecast meetings, at which the forecasts of the UK and world economies are presented.

PAPERS AND PRESENTATIONS FROM THESE AND OTHER INSTITUTE EVENTS CAN BE DOWNLOADED FROM THE EVENTS PAGE OF OUR WEBSITE ([WWW.NIESR.AC.UK/EVENT](http://WWW.NIESR.AC.UK/EVENT)). ENQUIRIES TO [H.BARNES@NIESR.AC.UK](mailto:H.BARNES@NIESR.AC.UK)

## BOOKS AND MAJOR REPORTS

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### IMPROVING PRIMARY MATHS

Researchers at the National Institute and inspectors at the London Borough of Barking and Dagenham have come together to improve standards of mathematics among primary school pupils of all levels of ability. The partnership has been developing teaching materials and teaching methods based on successful practice observed in primary schools in Switzerland as part of the Improving Primary Mathematics (IPM) project. More than 18,000 pupils in over 60 schools are now using the materials and teaching methods developed by the project.

Teaching materials for use with pupils in Years 1, 2, 3 and 4 are now available for schools to purchase and have sold well. Materials for years 5 and 6 will be available by September 2003. A web site containing more detailed information and examples of pupils' and teachers' materials is available at [www.ipmaths.co.uk](http://www.ipmaths.co.uk).

*All materials are available from Improving Primary Mathematics, Plymbridge Distributors Ltd, Estover Road, Plymouth PL6 7PY. Telephone: 01752 202301, Fax: 01752 202333, e-mail: [orders@plymbridge.com](mailto:orders@plymbridge.com)*

### PRODUCT QUALITY, PRODUCTIVITY AND COMPETITIVENESS: A STUDY OF THE BRITISH AND GERMAN CERAMIC TABLEWARE INDUSTRIES

*by Valerie Jarvis, Mary O'Mahony and Hans Wessels*

*NIESR Occasional Paper no. 55*

The determinants of cross-country differences in economic performance have been much described, but remain ill-understood. This project builds on the considerable experience of the NIESR team in carrying out detailed case-study analysis, based on visits to matched manufacturing plants in Britain and Germany, with a view to recording, for the industry in question, (a) whether a significant difference exists between the two countries in the average

quality of total production; and (b) to examine – from raw materials to workforce skills – which contribute to those quality differences.

### FORTHCOMING PUBLICATIONS

#### SOCIAL SECURITY AND PENSION REFORM

*Edited by Martin Weale*

*NIESR Occasional Paper 56*

This book presents six papers on questions of social security and pension reform. Both empirical and theoretical issues are addressed with specific analysis of problems faced by Finland, Germany and the Netherlands. The issues discussed include early retirement, demographic and other aspects of risk, redistribution and the interaction between political and economic forces shaping pension reform.

#### FINANCIAL STRUCTURE: AN INVESTIGATION OF SECTORAL BALANCE SHEETS IN THE G-7

*by Joseph P. Byrne and E. Philip Davis*

*To be published by Cambridge University Press in Summer 2003*

Cross country comparisons of sectoral balance sheets offer crucial indications of differences in overall financial structure, which in turn underlie contrasts in financing and economic behaviour. In this context, this book aims to confront theory and extant empirical work with aggregate financial data across the G-7, covering the period from 1970 to 2000. Viewed in the light of the main theoretical and empirical results in the economic literature, it explores the contrasting patterns and development of financial structures in the UK, the US, Germany, Japan, Canada, France and Italy. It uses as raw material sectoral balance sheet data published by national statistical authorities across the corporate, household, general government, foreign, financial, banking and institutional-investor sectors.

*The quarterly Economic Review continued to provide a unique combination of analysis, forecasts and research results. The year 2002 began with the 2nd half of a special issue on developments in education and vocational training in Britain. The April edition contained articles on the UK and the Euro Area and in October we focussed on business cycle analysis. We continue to publish forecasts for the UK and all major world economies in each edition of the Review, together with articles from leading commentators, and a comprehensive statistical appendix.*

Articles which appeared during the year were as follows:

**No. 179 (January)**

**Developments in education and vocational training in Britain: Part II Education**

Mathematical attainments in primary schooling: raising standards and reducing diversity

*Julia Whitburn*

Yet more maths problems

*Geoffrey Howson*

The macroeconomic effects of higher oil prices

*Benjamin Hunt, Peter Isard and Douglas Laxton*

Macroeconomics and history

*Andrew Britton*

**No. 180 (April) Issue on the UK and the Euro Area**

The UK and EMU: choosing the regime

*Ray Barrell*

Productivity and convergence in the EU

*Mary O'Mahony*

A comparison of balance sheet structures in major EU countries

*Joseph P. Byrne and E. Philip Davis*

EMU investment and growth: some unresolved issues

*Nigel Pain*

**No. 181 (July)**

Towards a new economy? Recent inflation and unemployment in the United Kingdom

*J.R. Sargent*

UK real national income, 1950–1998: some grounds for optimism

*Nicholas Crafts*

The exchange rate as a source of disturbances: the UK 1979–2000

*David Cobham*

**No. 178 (October) Issue on Business cycle analysis**

Introduction

*Martin Weale*

Have UK and Eurozone business cycles become more correlated?

*Michael Massman and James Mitchell*

A long view of the UK business cycle

*Jagjit S. Chadha and Charles Nolan*

Dating the business cycle in Britain

*Michael Artis*

The prediction of business cycle phases: financial variables and international linkages

*Denise R. Osborn and Marianne Sensier*

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## OTHER PUBLISHED ARTICLES AND PAPERS PRESENTED

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- Anderson, T., Millward, N. and Forth, J.  
*Discrimination on the Basis of Race, Age, Religion or Sexual Orientation: Secondary Analysis of the 1998 Workplace Employee Relations Survey*, London, Department of Trade and Industry.
- Arestis, P., Brown, A., Mouratidis, K. and Sawyer, M., 'The euro: reflections on the first three years', *International Review of Applied Economics*, 16, pp. 1–17.
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- Ashworth, P. and Byrne, J.P., 'Some international evidence on price determination: A non-stationary panel approach', *Economic Modelling* (forthcoming).
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- Barrell, R., Byrne, J. and Dury, K., 'The implications of diversity in consumption behaviour for the choice of monetary policy rules in Europe', *Economic Modelling* special issue to mark Brian Henry's retirement (forthcoming).
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- Barrell, R. and Weale, M., 'EMU four years on: the position of the UK', *Oxford Review of Economic Policy* (forthcoming).
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- 'National evaluation of Sure Start: cost-effectiveness evaluation methodological report' (<http://www.ness.bbk.ac.uk/documents/Activities/CostEffect/CostEffectivenessReport.pdf>).
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- Pain, N., 'Openness and growth: an international perspective', *Journal of the Statistical and Social Inquiry Society of Ireland*, XXX, pp. 140–57.
- 'Fiscal policies, European integration and structural changes in the location of German foreign direct investment', in Herrmann, H. and Lipsey, R.E. (eds) *Foreign Direct Investment in the Real and Financial Sectors of Industrial Countries*, Springer Verlag (forthcoming).
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- Rolfe, H. and Anderson, T., *A Firm Decision: The Recruitment of Trainee Solicitors*, Law Society Research Report no. 42.
- Rolfe, H., Metcalf, H., Anderson, T. and Meadows, P., 'Recruitment and retention of childcare, early

- years and playworkers: research study', DfES Research Report (*forthcoming*).
- White, M. and Riley, R., 'Findings from the 'Macro' evaluation of the New Deal for Young People', Research Report no. 168, Department for Work and Pensions.
- Papers presented**
- Arestis, P. and Mouratidis, K., 'Credibility of EMS interest rate policies: a Markov regime-switching of a bivariate autoregressive model, International Conference on Macroeconomic Analysis and International Finance, University of Crete, Department of Economics, Rethymno, 23–25 May.
- Barrell, R., 'Tensions over the Stability Pact and economic growth', RIIA Conference on EMU, February.
- 'Britain and EMU', CEPPII-NIESR conference on EMU, February.
- Barrell, R., Becker, B., Byrne, J., Gottschalk, S., Hurst, I. and van Welsum, D., 'Macroeconomic policy in Europe: experiments with monetary responses and fiscal impulses', EU Workshop in Bonn, June.
- Barrell, R., Holland, D. and Pain, N., 'An econometric macro-model of transition: policy choices in the pre-accession period', Royal Economics Society Annual Conference 2002, Warwick, March.
- Barrell, R., Holland, D. and Šmídková, K., 'An empirical analysis of monetary policy choices in the pre-EMU period', AIECE Conference, Brussels, October.
- Barrell, R., Hurst, I. and Kirsanova, T., 'Choosing the regime in an uncertain world, the UK and monetary union', ESRC Money Macro Finance Conference, September.
- 'Choosing the rules: fiscal and monetary frameworks in Europe', UN LINK Conference, University of Bologna, October.
- Barrell, R., Hurst, I. and Pina, A., 'Fiscal targets, automatic stabilisers and their effects on output', Bank of Italy Seminar on Fiscal Policy, Perugia, March.
- Barrell, R. and Riley, R., 'Sustainable employment in the UK: the impacts of policy, skills and technology', ESRC Money Macro Finance Conference, September.
- Barrell, R. and Weale, M., 'EMU four years on: the position of the UK', Conference on EMU, European University Institute, Florence, September.
- Becker, B. and Pain, N., 'What determines industrial R&D expenditure in the UK?', Annual Conference of the European Association for Research in Industrial Economics, Madrid, September.
- Blake, A.P. and Weale, M.R., 'Policy rules and economic uncertainty', ESRC Macroeconomics Conference, Cambridge, September.
- Byrne, J.P. and Davis, E.P., 'Investment and uncertainty in the G7', Money Macro Finance Conference, Warwick University, September.
- Forth, J., 'The gender pay gap: the research evidence', Gender Research Forum on 'The Gender Pay and Productivity Gap', London, November.
- Forth, J. and Millward, N., 'High involvement management and pay in Britain', Applied Econometrics Association Conference on 'The Econometrics of Wages', Brussels, May.
- 'The implications of complex survey samples for quantitative analysis in the field of employment relations', Annual Conference of the British Universities Industrial Relations Association, Stirling, July; Policy Studies Institute, London, October.
- Kirby, S. and Riley, R., 'The employment effects of ONE: interim findings from the full participation phase', Employment Group Seminar, Policy Studies Institute, London, May.
- Massmann, M., Mitchell, J. and Weale, M.R., 'Business cycle techniques', Working Group on Euro-Indicators, Eurostat, Luxembourg, 11–12 July.
- Mitchell, J. and Mouratidis, K., 'Is there a common Euro-zone business cycle', Colloquium on Modern Tools for Business Cycle Analysis, Luxembourg, 28–29 November.
- Mitchell, J. and Silverstone, B., 'The determinants of business confidence', Department of Economics, University of Waikato, New Zealand, 25 October.
- Riley, R. and Weale, M.R., 'Household consumption and uncertainty', MMF Conference, Warwick, September.

## NATIONAL INSTITUTE DISCUSSION PAPERS

*Discussion papers exist to foster debate on Institute research. Recent papers listed below are available on our website [www.niesr.ac.uk](http://www.niesr.ac.uk) or free on request.*

192. A comparison of personal sector saving rates in the UK, US and Italy *Tatiana Kirsanova and James Sefton*

193. Credibility of the Russian stabilisation programme in 1995–98 *Tatiana Kirsanova*

194. Aggregate versus disaggregate survey-based indicators of economic activity *James Mitchell, Richard J. Smith and Martin R. Weale*

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203. London's unemployment in the 1990s: tests of demand-side explanations for its relative growth *John Forth, Hilary Metcalf and Neil Millward*

204. An empirical analysis of monetary policy choices in the pre-EMU period *Ray Barrell, Dawn Holland and Kateřina Šmídková*

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The domestic model – NiDEM – has over 400 variables which provide an unusually rich description of the workings of the UK economy. A major use within the Institute is to drive the quarterly economic forecast produced in the *National Institute Economic Review*, but it is also used by outside organisations for a wide variety of forecasting purposes.

Trial copies of both models, and further information, can be obtained from the contacts listed on the inside back cover.

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*Members Forum meetings in 2002 were as follows:*

### **13 February: Mary O'Mahony, The UK productivity gap in the 1990s**

Guests included Mr Daniel Gordon, HM Treasury, Mark Miller, Morgan Stanley, and Michael Queen, 3i plc.

### **23 May: Taxation of Income from Capital**

Martin Weale, CBE, NIESR Director. Guests included Jonathan Leape, LSE, and Josh McCallum, HM Treasury.

### **23 October: Presentation of the quarterly forecast of the UK and World economies**

Guests: included representatives from the International Monetary Fund and the European Central Bank.

### **4 December: CBI Business Survey Data Presentation by Martin Weale, CBE, NIESR Director.**

Guests included Simon Briscoe, the Financial Times, and Sudhir Junankar, CBI.

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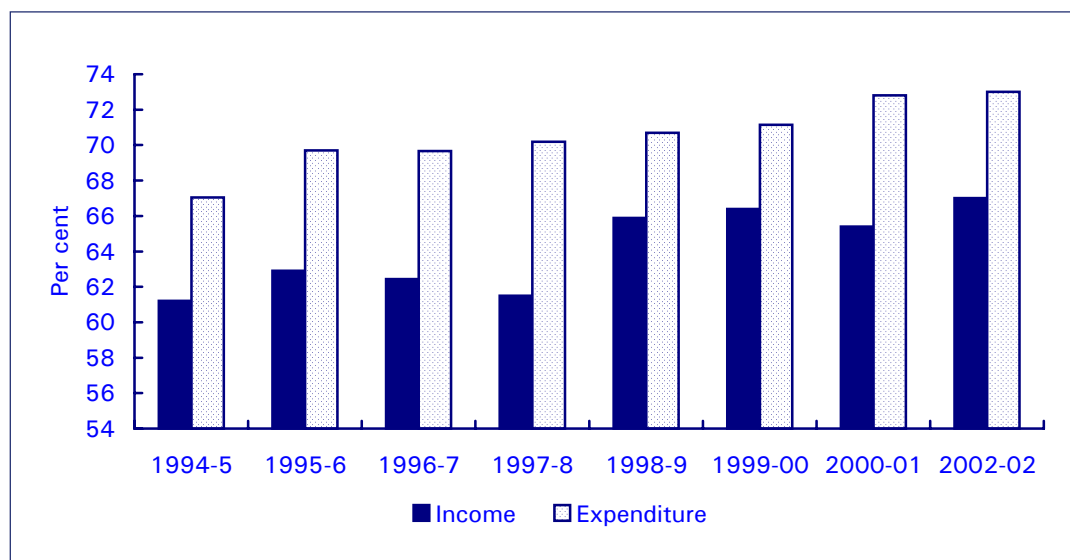
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*In the year to 31 March 2002 the Institute reported an operating surplus for the year. The policy of the Council is to balance income and expenditure over the long term, while recognising that fluctuations may occur in individual years. Full accounts for each of the years listed, including an unqualified audit report from KPMG Audit plc, have been filed at Companies House and the Charities Commission.*

	2001–2	2000–2001	1999–2000
	£	£	£
INCOME			
Research	1,527,578	1,307,346	1,346,399
Publications	536,045	433,266	443,721
Corporate supporters	109,755	109,136	86,630
Investments and interest	117,327	146,791	150,905
<b>Total income</b>	<b>2,290,705</b>	<b>1,996,539</b>	<b>2,027,655</b>
EXPENDITURE			
Research	1,615,649	1,480,249	1,349,369
Publications	256,106	200,038	252,640
Premises	60,064	89,396	87,581
Administration and general services	294,719	263,345	207,006
<b>Total expenditure</b>	<b>2,226,538</b>	<b>2,033,028</b>	<b>1,896,596</b>
OPERATING SURPLUS/(DEFICIT)	<b>64,167</b>	<b>(36,489)</b>	<b>131,059</b>

Research income and expenditure as a percentage of total income and expenditure





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