

CENTRE FOR THE
MICROECONOMIC ANALYSIS
OF PUBLIC POLICY

IFS

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ECONOMIC
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RESEARCH
COUNCIL

ANNUAL REPORT

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E·S·R·C Centre for the
Microeconomic Analysis of Public Policy
at the Institute for Fiscal Studies

ANNUAL REPORT 2004

In 1991, the ESRC and IFS created a new centre of academic excellence in microeconomic research – the Centre for the Microeconomic Analysis of Fiscal Policy. This Centre was renewed in 2001 and, reflecting the broader remit of research that had developed over the first decade, it was renamed the Centre for the Microeconomic Analysis of **Public Policy**, **CPP**. We are delighted that the ESRC has agreed to fund the Centre for a further five years, starting in 2005.

Research at the Centre falls into four broad themes: work, savings, wealth creation and welfare. The first covers the effects of tax policy and welfare programmes on work incentives. The second covers household saving and consumption behaviour, and includes work on pensions. The third covers taxes and business investment, innovation and productivity, and education and training. The fourth covers inequality in the distribution of incomes and expenditures, and broader issues in social welfare.

Alongside its research, the Centre promotes academic dialogue in its subject areas, serves as a training centre and conveys findings to policy-makers with enough clarity to influence decisions. By organising conferences, providing a base for foreign visitors, sponsoring young scholars and providing media briefings, and through its network of Research Associates and Fellows, the Centre strives to be a national and international resource.

This report reviews the Centre's work for the calendar year of 2004 and presents an account of ongoing research activity including future developments.

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1. EXECUTIVE SUMMARY

This report covers the calendar year 2004, which was the third full year of activities at the ESRC Centre for the Microeconomic Analysis of Public Policy at the Institute for Fiscal Studies (IFS). The Centre for Public Policy (CPP) developed out of the earlier ESRC Centre for the Microeconomic Analysis of Fiscal Policy, which provided core support for research at IFS between 1991 and 2001 and was one of the first Designated Research Centres to be funded by the ESRC. We are very pleased that, following an open competition for Research Centre support, the ESRC has renewed its support for the Centre for Public Policy for a further five-year period commencing in April 2005.

The Centre for Public Policy supports the ESRC's mission objectives of providing high-quality research and training, communicating research findings to a wide range of users and beneficiaries, and promoting public understanding of the social sciences. The Centre provides an exceptional environment in which researchers can develop and disseminate knowledge that contributes to the effectiveness of public policy, and in which younger researchers can develop the skills needed to meet these objectives. Our commitment to training includes a programme of Research Scholars studying for PhDs under the supervision of Centre researchers.

We aim to produce cutting-edge research on issues relevant to public policy. The quality of our research is reflected in the representation of Centre researchers on the editorial teams of leading scientific journals and on the organising committees of prestigious international conferences. Several Centre researchers are involved in the organisation of the 9th World Congress of the Econometric Society, to be held at University College London in August 2005. Richard Blundell is one of the three programme chairs for this quinquennial conference, at which the Centre will run special sessions focused on public policy issues. Other indicators of the Centre's reputation in the international research community include the flow of influential papers published in top peer-reviewed journals, and the range and quality of our Research Fellows, Research Associates and other visitors to the Centre.

The relevance of the Centre's work is signalled by the high level of interest that it attracts among the policy-making community and the media. We strive to engage with users of research both within and outside the academic arena, and to raise the public profile of our work – for example, through our support for the annual IFS Green Budget analysis and commentary on issues central to UK Budgets.

Research at the Centre is currently organised around four broad themes covering work, savings, wealth creation and welfare. Beyond April 2005, our agenda will be widened, with more emphasis on new areas such as competition policy and economic development. We will continue to contribute high-quality research on issues that are central to the priorities of the ESRC, and to engage in important policy debates.

Our research on labour markets covers individual and household decisions on hours of work and participation in the formal labour market, and how work incentives are affected by taxation and welfare programmes. How, for example, is employment affected by initiatives such as the working tax credit and the New Deal for Young People?

Our research programme on issues related to saving includes how individuals save for retirement and to cushion shocks such as unemployment or ill health, and how household wealth is allocated between housing and different financial assets. Central to this is research on the effects of public policies, such as taxation, welfare benefits and the public provision of pensions, on these decisions. How, for example, do state and private pension arrangements affect retirement decisions, and the financial well-being of pensioners?

Our research on wealth creation covers three broad areas: business taxation and investment; innovation and productivity; and education and human capital. This includes work on the relationship between uncertainty and company investment, the determinants and effects of research and development, and the effects of education on earnings. Examples of the policy issues addressed by this research include the effects of competition policy on incentives for firms to innovate, and the effects of pre-school education provision on child development, educational attainment and subsequent labour market outcomes.

Our research programme on welfare covers measurement of the distribution of wages, income and consumption, trends in inequality and measures of poverty, how consumer welfare is affected by the introduction of new products, and measurement of the cost of living. How, for example, have changes to the tax and benefit system affected income inequality in recent years?

Some highlights of our work during 2004 include new research findings on the effects of radical income tax reform in Russia, undertaken in collaboration with researchers at the International Monetary Fund; and on the effects of education maintenance allowances in the UK, developing our work as part of an interdisciplinary team that designed and conducted the pilot evaluation of these incentives for 16- to 18-year-olds to remain in full-time education. Other innovative research includes work on the measurement and decomposition of income risk, the estimation and testing of models of consumer demand, and the effects of product market competition on innovation by firms.

Centre researchers also seek to inform and to engage in policy debates. In the last year, we have produced accessible Commentaries on trends in poverty and inequality in Britain, and online Briefing Notes on topics such as higher education reforms, public spending, child poverty, and government support for innovation. In September 2004, Centre researchers organised the Economics section of the British Association's Festival of Science, on pension reform and the welfare of pensioners. Presentations by Centre researchers covered recent trends in UK retirement patterns and pension arrangements, and future prospects for UK pensions policy, drawing on findings from the English Longitudinal Study of Ageing (ELSA). Other Centre research on subjective life expectancies of the elderly was presented as part of the ESRC's Social Science Week in June 2004, and evidence from ELSA on current pension wealth of the over-50s was provided for the Pensions Commission.

We continue to attach high priority to our role in promoting public understanding of social science. In the last year we have relaunched our website, which on average attracts around 33,000 visitors per month, and updated our online resources describing key developments in the UK tax and benefit systems and trends in UK income distribution.

The remainder of this report describes the activities of the Centre for Public Policy in the period January–December 2004 in more detail. We believe that the Centre has consolidated its reputation for high-quality policy-oriented microeconomic research, and we are delighted to have the opportunity to develop this agenda still further in coming years.

2. INTRODUCTION

This report covers the Centre's activities during 2004. This was the third full year of the ESRC Centre for Public Policy, which replaced the earlier ESRC Centre for Fiscal Policy, and continues the successful ESRC Centre support since 1991 for policy-oriented empirical microeconomic research at the Institute for Fiscal Studies. We are delighted that as a result of our successful application to the recent Research Centres competition, the ESRC will be continuing this support for a further five-year period from April 2005.

Research at the Centre is deeply rooted in the development and application of rigorous empirical methods to microeconomic data to address topical issues in public policy. All senior IFS staff contribute to the management of the Centre. This provides a highly effective framework for the development and monitoring of new research, the dissemination of our findings to a wide range of research users, and the training and development of younger researchers.

The Centre aims to produce rigorous research findings in areas that are directly relevant to the design and evaluation of public policies. To this end, we engage in regular discussion with the policy community, helped by the long-standing reputation of IFS for independent and authoritative analysis. We draw on the expertise of leading academics in the UK and abroad, in economics and related fields. Many of these are actively involved in the development of research areas, as Research Associates or Research Fellows of the Centre. We host events that include both high-profile academic seminars addressed by top international researchers, and conferences on policy issues that attract much broader interest, as reflected by their coverage in the media. We also present our work at major international conferences and at academic seminars worldwide. In these ways, we strive to maintain both the policy relevance of our research and our leading position in the international research community.

Our research programme is organised in four broad themes: work, including the labour market impacts of tax and welfare policies; savings, including life-cycle consumption behaviour and issues related to pensions and retirement; wealth creation, including investment and innovation by firms, productivity growth, and education issues; and welfare, including analysis of inequality and poverty, welfare measurement, and the cost of living. The Centre's work has close links with other research activities based at IFS, or in which IFS is a partner, including the Centre for Economic Research on Ageing (CERA), the Centre for Early Years and Education Research (CEYER), the Centre for the Evaluation of Development Policies (EDePo), the Centre for Microdata Methods and Practice (cemmap), and the English Longitudinal Study of Ageing (ELSA). Several Centre researchers are currently involved in the organisation of the 9th World Congress of the Econometric Society, to be held at University College London in August 2005, at which the Centre is planning to run a series of policy sessions.

The rest of this report provides more detail of the Centre's output and contributions to the policy debate during 2004.

3. OBJECTIVES

The objectives of the Centre for the Microeconomic Analysis of Public Policy remain those set at its inception. The principal aim is to inform debate on the microeconomic effects of public policies, addressing the growing need for sound evaluation and careful analysis of public policy. To do this effectively, the objectives include:

- (i) development and application of cutting-edge microeconomic and microeconometric research methods to analyse the scope for successful policy intervention and to evaluate past and proposed policy changes;
- (ii) provision of highly developed network access to firm-level and household-level databases, with detailed simulation models of how the fiscal system affects individuals and firms;
- (iii) collaboration with leading researchers in related disciplines in other Centres and elsewhere in the UK and abroad;
- (iv) provision of expert training and supervision for younger researchers, giving them close links to the policy arena;
- (v) active dissemination of research findings to a wide range of users in the academic and policy communities, and engagement in the policy debate.

4. MAIN OUTCOMES OF THE YEAR

This report of the ESRC Centre for the Microeconomic Analysis of Public Policy covers the Centre's activities in the calendar year 2004. This was the third full year in which the ESRC Centre for Public Policy provided core support for research and dissemination at the Institute for Fiscal Studies, building on the base established by the ESRC Centre for Fiscal Policy in the period 1991–2001.

A key development during 2004 was the commitment of the ESRC to continue its support of the Centre for Public Policy for a further five-year period from April 2005. This decision was the outcome of an open competition for ESRC Research Centre funding. Our successful application will allow the research team at the Centre to continue to engage in both academic and public debates about the impacts of public policies on the economy.

Some highlights of our research over the last year include a careful microeconomic analysis of the recent income tax reform in Russia, which replaced a schedule with increasing marginal tax rates by a 'flat tax' at the single rate of 13 per cent. Our analysis, in collaboration with researchers at the International Monetary Fund, casts doubt on claims that this tax reform produced strong supply-side effects on participation and hours worked. The Centre remains at the forefront of research on the evaluation of active labour market programmes and public policies on education and training. Within this area, we have contributed to methodological developments, promoted the understanding and use of new empirical methods, and applied these tools to study important policy developments such as the pilot evaluation of education maintenance allowances in the UK. Another major area of our research concerns productivity growth of firms and plants in both manufacturing and service sectors, and the contribution made by both organisational and technological innovations. A focus during 2004 was the effects of product market competition on innovation by firms, where our research finds that increased competition tends to raise innovation by firms that are initially efficient and can expect to deter potential entrants by innovating, but has the opposite effect for firms that are initially less efficient.

Centre researchers strive both for high academic standards and to communicate their findings to a wide range of research users. In the last year, research papers have been published in leading scientific journals, including *Econometrica*, the *Review of Economic Studies* and the *Journal of Political Economy*. The Centre organised a major international conference hosted by the British Academy in memory of the distinguished economist W. M. (Terence) Gorman, which was addressed by Nobel laureates Daniel McFadden (Berkeley) and James Heckman (Chicago). Several Centre researchers have participated in the organisation of the Econometric Society's 9th World Congress, to be held at University College London in August 2005, for which Richard Blundell is one of the three programme chairs. The Centre also organised the Economics section at the British Association's 2004 Festival of Science, on pension reform and the welfare of pensioners. Influential reports were published on poverty and inequality in Britain and household expenditure patterns in the UK. Conferences were held on, for example, government support for families with children, and the effects of government reforms on incentives to work. Online Briefing Notes were produced on, for example, higher education funding, child poverty, and government support for innovation.

As in previous years, ESRC Centre support made a major contribution to work at the Institute on public finance issues in the UK, including the annual IFS Green Budget and briefings for journalists on the Budget, the Pre-Budget Report and the 2004 Spending Review. Centre researchers have provided analyses for the Select Committee on Work and Pensions and the Pensions Commission, and served on the academic panel of the Competition Commission.

An important development in 2004 was the launch of our new website, with specific financial support and advice from the ESRC. The Internet plays an increasingly important role in the dissemination of our findings to a wider audience. Over the last year, we have also updated our online resources describing key developments in the UK tax and benefit systems and trends in the UK income distribution.

The Centre maintains strong links with outside academics, including a network of Research Fellows and Research Associates based in the UK, and International Research Associates based overseas. We actively collaborate with researchers in other relevant disciplines, and participate in international collaborative projects, including networks supported by the European Union and the US National Bureau of Economic Research. Distinguished visitors to the Centre over the last year included Gordon Anderson (Toronto), Andrew Bernard (Dartmouth), Martin Browning (Copenhagen), Jason Cummins (Federal Reserve Board), Arthur Lewbel (Boston College), Robert Moffitt (Johns Hopkins), Torsten Persson (Stockholm), Peter Schott (Yale) and Guido Tabellini (Bocconi).

Research at the Centre is organised around the four broad themes of work, savings, wealth creation and welfare. Within each theme, we run more specific research programmes. The main outcomes in each programme are described in Section 7 below, and are summarised briefly in the rest of this section.

Our work on public policy and labour markets has compared the predicted effects of policy reforms based on structural models of labour supply behaviour estimated using data available before reforms are implemented, and those suggested by ex-post evaluations using data from periods before and after the implementation of particular reforms. Important new developments in this area have included: an empirical evaluation of the 'flat tax' introduced in Russia in 2001; an assessment of the efficiency of alternative income support programmes, comparing traditional means-tested welfare payments and in-work benefits for low earners; and the construction of a general equilibrium model that will allow a broader evaluation of labour market interventions such as the New Deal for Young People. We have also continued work to integrate labour supply responses into our tax and benefit microsimulation model (TAXBEN) and to maintain and update our online resources describing the UK tax and benefit system.

Our research on household consumption and saving behaviour has built on earlier findings describing the key role played by housing in the wealth of UK households to develop life-cycle models of asset accumulation in which discrete decisions on housing play a central role. Related research on house prices and consumption casts doubt on the view that increases in house prices raise consumer spending through a wealth effect, noting that higher house prices increase wealth only for those individuals that expect to be net sellers of houses. A broad programme of research looks at saving for retirement and the effects of public pension policy on the welfare and behaviour of older households. Much of this uses the English Longitudinal Study of Ageing (ELSA), which the Centre has played a major part in developing. Research over the last year has included: work showing that subjective expectations underestimate actual average life expectancies; analyses of the effects of changes in both public pension provision and the structure of private pension arrangements on the wealth of older households and the labour supply behaviour of older workers; and international collaborative work on how state pensions affect the elderly population in various ways, including consumption, health and self-reported well-being in addition to income.

Centre research on wealth creation covers investment, innovation and productivity growth, as well as a broad programme on education and human capital. Research on business taxation has focused on international issues, including the impact of globalisation on the structure of

national tax systems in developed countries. Research on investment has included a joint project with the Bank of England on the effects of uncertainty on company investment. Research on innovation has considered the effects of product market competition, finding an inverted-U relationship, with innovation tending to be lower both in very monopolistic and in very competitive sectors. Work on R&D has considered the importance of the location of R&D activities for the pattern of spillovers and technology transfer. A new collaborative project is looking at the determinants and effects of ICT adoption by firms in Brazil and India. Other work has considered the effects of technology on vertical integration, patterns of outsourcing in business services, and productivity differences between multinational and domestic firms in the service sector.

Our research on education has used National Child Development Study data on a cohort followed up to age 42 to consider longer-term impacts of pre-school (e.g. nursery) education and/or early entry into primary school on outcomes such as cognitive development, social skills, educational attainment and labour market outcomes. We have also developed our analysis of the effects of tuition fees and alternative higher education funding policies on students, graduates, universities and taxpayers. This uses recently developed statistical methods to account for the full distribution of lifetime earnings profiles. Other work in this area considers the relative merits of different empirical evaluation methods used to study the causal effect of education on earnings, and is developing a general equilibrium approach to analysing the effects of education policies, accounting for the feedback effects that changes in the supply of educated workers can have.

Centre research on welfare and inequality has analysed recent developments in income inequality in Great Britain, highlighting the important role played by changes at the very top and very bottom of the income distribution in recent years. Other work has compared trends in income inequality and expenditure inequality, noting that expenditure inequality fell during the 1990s when income inequality was still rising, and has assessed the extent to which changes in taxes and benefits have contributed to trends in income inequality, noting the importance of the decision to index benefits in line with prices rather than earnings. We have developed and applied methods for measuring changes in wage dispersion accounting for the changing composition of individuals in paid work that results from changes in employment rates, and methods for decomposing income changes and income risk into components due to permanent and transitory shocks, using data on income, consumption and assets. Work on welfare measurement has considered how multiple indicators can be combined to obtain welfare rankings without resorting to arbitrary weights. Work on household expenditure has integrated data from the new Expenditure and Food Survey with the earlier Family Expenditure Survey to derive consistent data from 1961 through to 2002–03 and has continued to develop non-parametric empirical methods for estimating demand curves and for testing the characteristics model of consumer demand.

5. PROGRESS TOWARDS OBJECTIVES

The research summarised in the previous section and described more fully in Section 7 illustrates substantial progress towards our first objective of developing and using microeconomic and microeconomic methods to study public policy issues. Methodological developments include our work on evaluation methods, our work on general equilibrium analysis of labour market programmes and education policies, our work incorporating housing decisions into life-cycle models of saving, and our work on the measurement and decomposition of income risk. Important applications include our work analysing income tax reform in Russia, our evaluation of education maintenance allowances in the UK, and our work on the effects of product market competition on innovation and productivity growth. These are described further in Appendix 1.

Our aim of providing better access to household- and firm-level databases has been advanced in the last year by work on UK household expenditure data. We have linked the old Family Expenditure Survey (FES) with the new Expenditure and Food Survey (EFS) so that we now have consistent data from 1961 to 2002–03, and we have modified existing programs so that future years of EFS data can be processed relatively easily. We have also continued to improve our tax and benefit microsimulation program, TAXBEN, focusing on the information computed about the work incentives facing individuals.

The Centre continues to collaborate extensively with leading researchers in the UK and abroad, notably through its networks of Research Associates and Research Fellows. Examples of interdisciplinary collaborations include our work with the Department of Epidemiology at University College London and with the National Centre for Social Research on the English Longitudinal Study of Ageing (ELSA), our work with government departments and others on evaluations of specific policies such as education maintenance allowances, and our work with the Advanced Institute of Management (AIM). Examples of international collaborations include our work with the International Monetary Fund on the Russian income tax reform and our work with the National Bureau of Economic Research on household wealth holdings, pension provision and retirement behaviour.

The Centre provides expert training and supervision for younger researchers. Junior staff learn on the job, by working closely with senior researchers on specific projects. As part of this training, junior researchers are encouraged to present their work both at academic conferences and to wider audiences. The Centre also supports a programme of Research Scholars studying for PhDs under the supervision of Centre researchers. The Centre provides exceptional opportunities for junior staff and scholars to present and discuss their research with a range of users in the policy arena, including politicians, civil servants and the media. During 2004, a number of staff benefited from a specific broadcast training day, with expert training provided by Liam Halligan of Channel 4.

Our progress in disseminating our findings to both academic and policy communities is described more fully in Section 9. Centre researchers have published around 50 papers in a range of journals, including leading international scientific journals such as *Econometrica* and widely read, non-technical journals such as *Economic Policy*. We have relaunched our website and improved our online resources describing UK tax and benefit systems, public spending, and the income distribution. We have engaged in policy debates by producing Reports, Commentaries and online Briefing Notes, and by holding conferences on issues such as child poverty, work incentives, and pensions policy. Centre research and support also make a major contribution to the annual IFS Green Budget analysis and to press briefings held after the Budget, the Pre-Budget Report and the Spending Review in 2004.

6. ISSUES AND PROBLEMS

None.

7. REPORT ON MAIN PROGRAMMES

This section describes the research of the Centre over the period. It summarises the main findings according to the four broad themes, it provides the names of Centre researchers who can be contacted regarding this research and it presents some selected references. A full list of publications can be found in Appendix 4.

Theme A. WORK: PUBLIC POLICY AND LABOUR MARKETS

1. Labour Market Responses to Tax and Benefit Reforms and Other Policy Interventions

Validating Structural Models with Natural Experiments

Empirical work on estimating the employment impact of tax and benefit reforms such as the new tax credits has so far tended to divide into two main categories: ex-ante simulations based on estimates of structural models using data collected before the reform takes place, and ex-post evaluations using data from before and after the reform. So far, there has been little systematic comparison of how ex-post and ex-ante methods compare in their accuracy and efficiency.

Using the Family Resources Survey covering periods before and after the introduction of the working families' tax credit (WFTC), we have compared the predicted change in the employment of lone parents from these two evaluation methods, and are deriving recommendations for future evaluation work. This work, which will be completed in 2005, can be seen as validating the use of structural models as an evaluation tool, which is important, given their greater flexibility in addressing policy questions and in quantifying fundamental economic relationships.

The Dynamics of Labour Market Responses to Policy Reform

Funding from the ESRC Centre has continued to help fund the development of a dynamic model of how changes in the tax and benefit system affect movements of individuals into and out of the labour market (labour market entry and exit).

In 2004, with support from the Department for Work and Pensions, the model was extended to analyse the labour market decisions of and the particular set of constraints faced by disabled people of working age in the UK. Including disabled people is important because a large proportion of men and women of working age who are not in work are disabled, and excluding them from a model of work and non-work limits the usefulness of the analysis. The model uses data from the UK Labour Force Survey, which operates as a five-quarter 'rolling panel'. This allows us to look at whether people in the LFS are in work when they are first surveyed (wave 1) and again a year later (wave 5). In this way, we can look at actual dynamics in the labour market rather than a static 'snapshot' of it. The model controls for childcare expenditure and incomplete take-up of in-work credits, but we also take great care to model entitlements to and receipt of incapacity benefit, disability living allowance, disabled person's tax credit and the income support disability premium as accurately as possible.

The results show that financial incentives to move into or out of work seem to have a role to play in helping to explain the flows we have seen in the labour market over the last few years. Conditional on a given level of financial incentives, disabled people in couples are more likely than non-disabled people in couples to exit and are less likely to enter employment. However, among single people, once we condition on financial incentives, we find that disabled people

are more likely to enter and less likely to exit employment. Many other factors, such as age, the presence of children in the household and previous unemployment, are also very important in explaining the patterns of labour market transitions that we see. Our estimation of couples' behaviour in the labour market suggests that the decisions of people in couples are correlated in such a way that they tend to choose the same labour market state. This correlation is, however, not always statistically significant.

The main advantage of estimating a model of labour market dynamics is that it can be used to predict the impact of reforms to the tax and benefit system on employment. The model predicts that moving from family credit to working families' tax credit increased employment overall by around 40,000 people, although it also predicts that the proportion of parents in couples in work fell while the proportion of lone parents in work rose, broadly in line with other studies. Simulating a modest increase in disabled person's tax credit suggests that it would have a small positive effect on employment of disabled people.

Myck, M. and Reed, H. (2005), *Disabled People in a Dynamic Model of Labour Supply and Labour Market Transitions*, Report for Department for Work and Pensions.

Tax Reform in Russia

In cooperation with the International Monetary Fund, we have recently completed a research project analysing the introduction of a controversial flat-rate income tax in Russia. In 2001, Russia dramatically reduced its higher rates of personal income tax (PIT), establishing a single marginal rate at the low level of 13 per cent. In the following year, real revenue from the PIT increased by about 26 per cent. This 'flat tax' experience has attracted much attention (and emulation) amongst policy-makers, making it perhaps the most important income tax reform of recent years. But it has been little studied. Our research asks to what extent the strong revenue performance of the PIT in Russia was attributable to this reform, using both macro evidence and, in particular, micro-level data on the experiences of individuals and households that were affected to varying degrees by the reform to the tax schedule. It concludes that there is no evidence of a strong supply-side effect of the reform. Compliance, however, did improve quite substantially – by about one-third according to our estimates – although it remains unclear whether this was due to the reform to income tax rates or to accompanying changes in tax enforcement.

Ivanova, A., Keen, M. and Klemm, A. (2005), 'The Russian flat-tax reform', International Monetary Fund Working Paper 05/16.

Optimality

In contrast to their impact on incomes and employment, there has been little empirical research on the efficiency of public income support programmes. Drawing on the (separate) seminal work of Mirrlees and Diamond, Saez (*Quarterly Journal of Economics*, 2002) shows that depending on the government's social welfare function and on the labour supply elasticities of different groups in the population, it is possible to derive the optimal tax and benefit schedule. In Saez's formulation, the government's social welfare function is represented by welfare weights that are a function of individuals' disposable income. He concludes that the optimal tax design depends heavily on whether labour supply responses are concentrated at the intensive (hours) or extensive (participation) margin: Mirrlees' results hold only when labour supply reacts mainly on the intensive margin; when labour supply responsiveness is concentrated at the extensive margin, negative marginal taxes at the bottom and a smaller guaranteed income level for non-workers become optimal. In ongoing work, Centre researchers are using the methodology developed in Saez (2002), combined with

estimates of labour supply elasticities derived from our structural labour supply model, to investigate the optimality of recent tax and benefit reforms affecting lone parents in the UK.

Immervoll et al. (CEPR Discussion Paper 4324, 2004) use Saez's (2002) framework to analyse the efficiency loss associated with marginal additional income redistribution in 14 western European countries for two different transfer programmes: a traditional means-tested welfare payment and an in-work benefit that targets the working poor. Recent work funded by the Centre has applied the same methodology to the UK over a longer time span than the original paper, focusing on the role of heterogeneity in consumption and labour tax rates, earnings and elasticities. The central finding is that, at the margin, the efficiency cost of the in-work benefit has consistently been much lower than that of the traditional welfare payment. However, by itself, this does not imply that the in-work benefit policy is preferable, since it may do less to help the poor.

Adam, S. (2005), 'Measuring the marginal efficiency cost of redistribution in the UK', mimeo, IFS.

General Equilibrium Evaluation of Labour Market Interventions

Centre researchers have continued work on the general equilibrium evaluation of labour market interventions using the New Deal for Young People as a specific example. This work advances on the structural evaluation of policy interventions by using a general equilibrium overlapping-generations model of savings, skills and human capital as well as labour supply choices to evaluate the impact of large interventions. Idiosyncratic uncertainty under risk aversion is considered, along with fixed costs of working and discrete choices to study or to work. We estimate a large subset of the structural parameters using currently available data for the UK. We then proceed to simulate several aspects of labour market policies, producing an ex-ante evaluation of the interventions and uncovering the economic mechanisms that lead to the identified effects.

Blundell, R., Costa Dias, M. and Meghir, C. (2004), 'The impact of human capital policies: a general equilibrium approach', unpublished manuscript, IFS.

Blundell, R., Costa Dias, M., Meghir, C. and Van Reenen, J. (2004), 'Evaluating the employment impact of a mandatory job search program', *Journal of the European Economic Association*, vol. 2, pp. 569–606.

Sianesi, B. (2004), 'An evaluation of the Swedish system of active labour market programmes in the 1990s', *Review of Economics and Statistics*, vol. 86, pp. 133–55.

Contacts: Stuart Adam, Mike Brewer, Monica Costa Dias, Alexander Klemm, Andrew Shephard

2. Microsimulation of Taxes and Benefits

Improving TAXBEN

With co-funding from the Inland Revenue, we have extended the way in which our tax and benefit microsimulation model, TAXBEN, is integrated with our structural labour supply model. With co-funding from the Joseph Rowntree Foundation, we have made it easier for TAXBEN to produce information about the financial work incentives facing individuals.

Putting Policy Reform in the Public Eye

Centre funding allows us continually to assess, discuss and comment on changes to personal taxes and benefits and to help promote public understanding and debate of these government policies. During 2004, IFS researchers gave presentations on the implications of trends in tax credits in the UK for the taxation of the family, the link between tax credit policies and child

poverty (see Theme D, programme 9 below), and how changes in tax credits have changed financial incentives for low-paid workers. Centre funding was vital in establishing these new lines of research, all of which have been or will be continued with support from other funders:

- support from the Joseph Rowntree Foundation allowed us to analyse the implications of the UK government's welfare reforms since 1997 on parents' financial incentives to work;
- tax and the family will be the subject of the 2005 IFS residential conference;
- support from the Joseph Rowntree Foundation will allow further research in 2005 on the implications of current policies for future rates of child poverty.

In addition, Centre funding has continued to allow us to maintain Fiscal Facts, our heavily-accessed online database of information about current and past tax and benefit regimes in the UK, and the collection of reports that review the structure of the UK tax and benefit systems. Our surveys of both the tax system and the benefit system were both updated in November 2004. Fiscal Facts and these updated surveys can be accessed at <http://www.ifs.org.uk/fiscalfacts.php>.

In 2004, Centre funding again made an important contribution to the IFS Green Budget report, described more fully in Appendix 1. For example, we discussed the relationship between income tax and National Insurance, and quantified how fiscal drag might increase the number of higher-rate taxpayers over the medium term.

Contacts: Stuart Adam, Mike Brewer, Andrew Shephard

Theme B. SAVINGS: ASSETS, CONSUMPTION, SAVINGS AND PENSIONS

3./4. Saving, Consumption and Housing

Research on household saving continues to be a major part of the Centre's research agenda. Much of our current work in this area is motivated by our earlier descriptive analysis that highlighted the key role played by housing in the wealth holdings of UK households. These two programmes are thus considered jointly in this year's report.

Over the last year, this research has been developed in several directions. We have invested considerable resources in the development of life-cycle models of saving and asset accumulation. In particular, we have been looking at versions of the life-cycle model where decisions on housing play an important role. These decisions are complicated by the very features that make housing interesting. Real estate is typically the largest asset in many households' portfolios, and, besides being an asset, it provides utility. However, house markets are characterised by relatively high transaction costs and indivisibilities. Finally, as research at IFS has documented, UK house prices and consequently the return on housing are among the most volatile in the world, and certainly more volatile than house prices in the US.

There are two main aims of our research on life-cycle models with housing decisions. On the one hand, we want to relate housing decisions directly to labour supply choices to explain some interesting patterns that we have found in microeconomic data. In particular, we observe that among married women, those with an outstanding mortgage are much more likely to be working. On the other hand, we aim to construct a general equilibrium model that could potentially explain the observed fluctuations in house prices.

The research on house prices has also inspired some recent work on the relationship between house prices and consumption. It has been argued that when house prices go up, households feel wealthier and consume more (and therefore save less). From a theoretical point of view, there is not much reason to expect such a relationship, as only those individuals who will be net sellers of houses will find that an increase in house prices increases their wealth. From an empirical point of view, we have documented that increases in house prices are related to increases in consumption only to the extent that they proxy for other phenomena, such as increases in productivity growth.

In addition to housing, we have been looking at the effect on saving of tax-advantaged investment opportunities. Our evidence suggests that such effects are not strong.

Finally, we have been conducting research on saving and consumption behaviour among households after retirement.

Attanasio, O., Banks, J. and Wakefield, M. (2004), 'Effectiveness of tax incentives to boost (retirement) saving: theoretical motivation and empirical evidence', IFS Working Paper W04/33, December.

Banks, J., Blundell, R. and Smith, J. P. (2004), 'Wealth portfolios in the United Kingdom and the United States', in D. Wise (ed.), *Perspectives on the Economics of Ageing*, University of Chicago Press.

Meghir, C. (2004), 'A retrospective on Friedman's theory of permanent income', *Economic Journal Features*, vol. 114, pp. F293–306.

Contacts: Orazio Attanasio, James Banks

5. Pensions and Retirement

Stakeholder Pensions

Faced with ageing populations, OECD governments are searching for policies to increase retirement saving. The existence of two full years of data since stakeholder pensions were introduced in the UK has allowed Centre researchers to analyse whether this policy has increased coverage by private pensions. Stakeholder pensions were introduced in 2001 and are low-cost retirement saving accounts targeted primarily on middle earners without access to occupational pensions. Using data from the Family Resources Survey, we find no evidence that stakeholder pensions have increased the proportion of this target group with a private pension. However, using a difference-of-differences econometric methodology that compares changes in coverage over time for different groups, we find that coverage has increased since the reform among those with earnings below those of the main target group, in particular among lower earners with a high-earning partner. We argue that this impact arises from a change in pension contribution limits that was a less-highlighted element of the ‘stakeholder’ reform package.

Chung, W., Disney, R., Emmerson, C. and Wakefield, M. (2004), ‘Public policy and saving for retirement: evidence from the introduction of stakeholder pensions in the UK’, mimeo, IFS.

Expectations of Longevity

Life expectancy is an important issue for the elderly, both as a measure of well-being in its own right and as an input into planning decisions regarding retirement resources for governments and for individuals. Analysis by Centre researchers contributed to the 2004 ESRC Social Science Week by analysing expected longevity of the population aged 50 and over, using data from the English Longitudinal Study of Ageing (ELSA). By comparing average self-reported chances of living to age 75 or more (for those aged 50–65) and average actual life expectancy for men and women, we found that individuals are underestimating their chances of living to age 75 or more. If, as seems likely, people take decisions based on their subjective expectations rather than on the true probabilities, this has important implications for an individual who is planning for retirement. Going forwards, we will build on this work by linking to data from the ONS Longitudinal Study, which shows true mortality outcomes by socio-economic status, in order to assess the extent to which these errors in longevity expectations differ across groups.

Banks, J., Emmerson, C. and Oldfield, Z. (2004), ‘Not so brief lives: longevity expectations and well-being in retirement’, in *Seven Ages of Man and Woman: A Look at Life in Britain in the Second Elizabethan Era*, Economic and Social Research Council, part of Social Science Week, 18 June 2004.

Pension Wealth

Centre researchers have also presented new evidence from ELSA on the current pension arrangements of those aged between 50 and the state pension age, and how these arrangements vary with other determinants of financial well-being in retirement, such as non-pension wealth and individuals’ expectations of remaining in paid work or receiving an inheritance. This analysis fed into the first report of the Pensions Commission published in the autumn of 2004. The next stage of this work, to compute actual current state and private pension wealth, is now complete. These estimates will be incorporated into further analysis which should shed light on the resources likely to be available in retirement among those now approaching the state pension age.

Attanasio, O., Banks, J., Blundell, R., Chote, R. and Emmerson, C. (2004), ‘Pensions, pensioners and pensions policy: financial security in UK retirement savings?’, IFS Briefing Note BN48, launched at ESRC Policy Seminar, 25 March 2004.

Banks, J., Emmerson, C. and Oldfield, Z. (2004), 'Preparing for retirement: the pension arrangements and retirement expectations of older workers in England', mimeo, IFS.

Pension Reforms

Centre researchers also contributed two papers to a session on pensions and pension reform at the 2004 British Association Festival of Science which was held at Exeter University (for more details, see Appendix 1). Recent increases in longevity have led not only to increased pressures on public pensions but also to corresponding increases in both the importance of private pensions in the UK and the way in which they are structured. The first paper looked at the economic implications of these changes, and in particular the increased importance of defined contribution plans (this topic was also the subject of a paper for the 2004 congress of the European Economic Association, as part of a special session on pension and social security reform). In addition, the analysis addressed the subsequent prospects for future trends in retirement ages and showed that we might expect labour supply of older workers to increase as defined contribution provision becomes more important. A second paper examined the effect of reforms to public pension provision in the UK on the state retirement incomes of current generations of pensioners and on the prospective state incomes of future generations of pensioners. It found that for individuals on average earnings, the UK pension system was at its most generous for those reaching the state pension age around the turn of the present century, but for individuals on low incomes, the introduction of the state second pension and the pension credit changes this picture considerably.

Banks, J. and Blundell, R. (2004), 'Private pension arrangements and retirement in Britain', presented at BA Festival of Science, 7 September 2004, Exeter University; forthcoming in *Fiscal Studies*.

Banks, J., Blundell, R. and Emmerson, C. (2004), 'The balance between DB, DC and state provision', presented at special session of the annual meeting of the European Economic Association, Madrid, August 2004; forthcoming in *Journal of the European Economic Association*.

Blundell, R., Meghir, C. and Smith, S. (2004), 'Pension incentives and the pattern of retirement in the UK', in J. Gruber and D. Wise (eds), *Social Security and Retirement around the World: Micro-Estimation*, University of Chicago Press.

Disney, R. and Emmerson, C. (2004), 'UK public pension reform: what effect on the finances of pensioners?', presented at BA Festival of Science, 7 September 2004, Exeter University; forthcoming in *Fiscal Studies*.

Public Pensions and Well-Being

International collaborative research into the issues surrounding the design of state pension systems has continued during 2004 with the emphasis of the latest stage being on how state pension systems affect the well-being of the elderly population. A number of different measures of well-being are being investigated, such as income, consumption, health and self-reported well-being. Where possible, variation over time in the generosity of state pensions (that have been calculated in the analysis described above) is being exploited in order to examine how such benefits affect these outcomes.

Banks, J., Blundell, R., Emmerson, C. and Oldfield, Z. (2004), 'Social security and the well-being of the elderly in the UK', presented at the NBER conference, London, 29 May 2004.

Contacts: James Banks, Carl Emmerson, Zoë Oldfield, Matthew Wakefield

Theme C. WEALTH CREATION: INVESTMENT, INNOVATION AND HUMAN CAPITAL

6. Taxes and Investment

Company Taxation

Our research programme has continued to focus on international aspects of corporate taxation.

One paper considered the imposition of a minimum corporate income tax rate in Europe. In general, there would be both advantages and disadvantages of such a move. However, the case for harmonisation of tax rates alone appears to be weak so long as countries are allowed to define their own tax base, even if one accepts the argument that tax competition between non-cooperative governments can be harmful.

A new collaborative research project, with Andreas Haufler (Munich) and Guttorm Schjelderup (Bergen), is considering the effect of globalisation on the structure of tax systems. Preliminary findings suggest that OECD countries are increasing their personal income tax rates relative to their corporate income tax rates as economies become more integrated.

Devereux, M., Griffith, R. and Klemm, A. (2004), 'Why has the UK corporation tax raised so much revenue?', *Fiscal Studies*, vol. 25, pp. 367–88.

Klemm, A. (2004), 'A minimum rate without a common base?', *Intereconomics – Review of European Economic Policy*, vol. 39, pp. 186–9.

Investment and Finance

A joint project with researchers at the Bank of England has compared the cross-section and time-series properties of alternative firm-level measures of uncertainty, constructed from high-frequency data on share prices and from data on analysts' earnings forecasts. Both measures vary counter-cyclically, consistent with survey evidence on perceptions of uncertainty from the CBI's Industrial Trends Survey. Although positively correlated across firms, both measures provide independent information that helps to explain company investment.

A new project with Research Associate Måns Söderbom (Oxford) has investigated the effects of adjustment costs for capital and labour on the estimation of commonly used production function specifications. We show that the presence of adjustment costs is important for the identification of production function parameters from micro data in the case where all firms face similar input prices. This work has developed a model that simulates optimal input and output choices in the presence of adjustment costs, which will be used in new research funded by the ESRC on the Q model of investment, and on the impact of uncertainty and credit constraints on investment by manufacturing firms in Africa.

Work also continued on the financial behaviour of innovative companies, and on the effects of changes to UK dividend taxation in the late 1990s on the dividend and investment behaviour of UK companies.

Aghion, P., Bond, S., Klemm, A. and Marinescu, I. (2004), 'Technology and financial structure: are innovative firms different?', *Journal of the European Economic Association*, vol. 2, pp. 277–88.

Bond, S., Klemm, A., Newton-Smith, R., Syed, M. and Vlieghe, G. (2004), 'The roles of expected profitability, Tobin's Q and cash flow in econometric models of company investment', IFS Working Paper W04/12.

Bond, S., Moessner, R., Mumtaz, H. and Syed, M. (2004), 'Microeconomic evidence on uncertainty and investment', mimeo, IFS and Bank of England.

Bond, S. and Söderbom, M. (2005), 'Adjustment costs and the identification of Cobb Douglas production functions', IFS Working Paper W05/04.

Contacts: Steve Bond, Alexander Klemm

7. Productivity and Innovation

Outsourcing and Offshoring

Work by Centre researchers in collaboration with researchers at Harvard, MIT and Stockholm University has looked at firms' organisational structures, in particular the extent of vertical integration – that is, whether to buy inputs from outside suppliers or to produce them internally. This research develops a model that predicts vertical integration to be more likely when producers are more technology intensive and less likely when suppliers are more technology intensive. This is because there are costs and benefits to vertical integration. When firms are integrated, this reduces suppliers' incentives to invest, since net benefits go to the producers. The predictions of this theory are consistent with evidence from UK plant-level data.

Research funded by AIM (Advanced Institute of Management) and conducted in conjunction with Mari Sako (Saïd Business School, University of Oxford) examined recent trends in specialisation, outsourcing and offshoring in the UK, and what drives firms' decisions to outsource activities, with a focus on the business services sector. Productivity in UK business services is catching up rapidly with that in the US, and at the same time the sector is expanding and creating new jobs in the UK. The UK has had a growing trade surplus in business services – more are purchased from the UK than the UK purchases from overseas. The findings were presented at an AIM conference.

Abramovsky, L., Griffith, R. and Sako, M. (2004), 'Offshoring of business services and its impact on the UK economy', IFS Briefing Note BN51.

Acemoglu D., Aghion, P., Griffith, R. and Zilibotti, F. (2004), 'Vertical integration and technology: theory and evidence', IFS Working Paper W04/34.

Productivity and Multinational Companies

Work has extended the analysis of productivity differences between multinationals (both foreign and UK-owned) and purely domestic firms to the UK service sector. It finds that British multinationals have lower levels of labour productivity than foreign multinationals, but the difference is less stark in the service sector than in the production sector, and that British multinationals have lower levels of investment and intermediate inputs per employee. It also finds that foreign-owned multinationals conduct a substantial amount of UK R&D.

Further work has investigated the dynamics of total factor productivity (TFP) at the establishment level, introducing technology transfer into a framework with heterogeneous firms and ongoing entry and exit. This work finds evidence that convergence to the TFP frontier is statistically and quantitatively important. Foreign multinationals make up a significant proportion of establishments at the technological frontier, and therefore make an important contribution to UK productivity growth by shifting out the frontier and thus allowing greater technology transfer.

Griffith, R., Redding, S. and Simpson, H. (2004), 'Foreign ownership and productivity: new evidence from the service sector and R&D lab', *Oxford Review of Economic Policy*, vol. 20, pp. 440–56.

Griffith, R., Redding, S. and Simpson, H. (2004), 'The dynamics of establishment productivity: technology transfer and productivity dispersion', mimeo, IFS and CEP.

R&D and Technology Transfer

Anecdotal evidence suggests that firms are increasingly locating R&D abroad in order to source technology rather than to adapt their products to local markets. Using data on the international patenting activity of UK firms, developed previously with funding from the Leverhulme Trust, Centre researchers have found evidence to suggest that this is an important

factor in explaining the increasing propensity of UK firms to locate R&D in the US. UK firms that conduct R&D in the US appear to benefit more than other UK firms from spillovers from US R&D.

Work carried out in conjunction with researchers at the Institute for Manufacturing at Cambridge has looked at policy towards innovation and technology transfer. An IFS Briefing Note presents new evidence on the UK's innovative performance and provides a summary of government business support programmes aimed at fostering innovative activity and technology transfer. A workshop was held to discuss the work and to bring together experts from different fields (academics, scientists, engineers, managers, economists and policy-makers) in order to improve the evidence base for policy formation in this area.

Further work in conjunction with researchers in France, Germany and Spain has used the third Community Innovations Survey to carry out international comparative research on innovative activity. This has looked at the effects of innovation on employment and productivity and has investigated the determinants of cooperative R&D activity.

- Abramovsky, L., Harrison, R. and Simpson, H. (2004), 'Increasing innovative activity in the UK? Where now for government support for innovation and technology transfer?', IFS Briefing Note BN53.
- Griffith, R., Harrison, R. and Van Reenen, J. (2004), 'How special is the special relationship? Using the impact of US R&D spillovers on UK firms as a test of technology sourcing', IFS Working Paper W04/32.
- Griffith, R., Redding, S. and Van Reenen, J. (2004), 'Mapping the two faces of R&D: productivity growth in a panel of OECD industries', *Review of Economics and Statistics*, vol. 86, pp. 883–95.

ICT Adoption

Joint work with researchers at the Centre for New and Emerging Markets at London Business School is collecting new evidence on the determinants and effects of information and communication technology (ICT) adoption by firms in Brazil and India. The project involves surveys of 500 firms in each country, carried out in collaboration with researchers at the University of Sao Paulo and the Indian Institute of Management in Ahmedabad. Key questions include the impact of ICT adoption on productivity performance, wages and employment, and the complementary role of management practices and organisational change.

Product Market Competition, Entry and Innovation

Joint work with researchers at Harvard and ZEW, Berlin, has investigated the effects of the intensity of product market competition on innovation. The view that competition and entry should promote efficiency and prosperity is commonly held, but in fact few theoretical models unambiguously predict that more competition increases innovation. This research has developed new theoretical models, which reconcile the divorce between theory and commonly held beliefs. The predictions from this new theory were tested empirically using micro data.

The findings imply that:

- the relationship between product market competition and innovation or growth is non-monotonic and takes the form of an inverted U – that is, innovation is lower both in monopolistic and in very competitive markets;
- opening up markets to foreign competition encourages innovation in industries that are initially close to the technological frontier and discourages innovation in industries that are far from it;
- the liberalising reforms to product markets that have taken place throughout the EU have led to an increase in employment rates.

In related work, researchers at IFS have worked with Jan Boone (Tilburg) on new measures of product market competition. Existing measures are known to perform poorly in certain situations. Theoretical work suggests alternative measures that are more robust to different types of changes in competition. Using simulations, we have extended the analysis of different measures and have considered how well these hold up to empirical investigation using a range of firm-level datasets.

Aghion, P., Bloom, N., Blundell, R., Griffith, R. and Howitt, P. (2005), 'Competition and innovation: an inverted U relationship', *Quarterly Journal of Economics*, forthcoming May 2005.

Aghion, P., Blundell, R., Griffith, R., Howitt, P. and Prantl, S. (2004), 'Entry and productivity growth: evidence from micro-level panel data', *Journal of the European Economic Association*, vol. 2, pp. 265–76.

Contacts: Laura Abramovsky, Rachel Griffith, Rupert Harrison, Helen Simpson

8. Training, Education, Human Capital and Wages

The Longer-Term Impact of Early Education Interventions

An emerging focus of government policy has been on the importance of early childcare and pre-school in improving the well-being of children, either through the enabling effect that childcare has on allowing parents to work or through other more direct effects of early education on children. The aim of a project co-funded by HM Treasury's Evidence-Based Policy Fund (EBPF) is to shed light on the question of how effective early pre-school and schooling is for improving the well-being of children, and whether any impacts are likely to be long-lasting.

Our work adds to the literature on these issues in three ways. First, by using data from the National Child Development Study (NCDS), a single cohort of people born in 1958, we employ very rich data, allowing us to control for a large set of parental, family, individual and neighbourhood characteristics in assessing the effects of early education on children. Second, by considering a cohort that has now reached adulthood, rather than a contemporary cohort, we are able to assess whether any effects are long-lasting. Finally, historical conditions at the time that this particular cohort were in their pre-school years allow us to exploit some arguably 'exogenous' variation in maintained provision, allowing us to assess the extent to which our results are robust to the presence of unobserved heterogeneity in pre-school and early school choices.

We examine the returns to two different early education 'treatments'. First, we consider the impact of a child obtaining any early education prior to the age of 5, whether this takes place in a school setting (through early entry to primary school) or in a pre-school setting (such as state-maintained or private nursery, or playgroup). This answers the question of whether any formal human capital intervention before the age of 5 is beneficial for child outcomes. Second, we restrict our analysis to attendance at pre-school only, answering the question of whether attendance at nursery or other establishments before entering primary school has short- or long-term effects.

We consider a range of outcomes relating to: (i) cognitive development, as measured by a series of tests taken by the children at ages 7, 11 and 16; (ii) socialisation, derived from both parental and teacher assessments of social skills, also at 7, 11 and 16; and (iii) educational attainment and labour market outcomes up to the age of 42. In further work, we will also consider (iv) parenting outcomes – namely, whether attendance in early education has any effects on how the children go on to bring up their own children when they become adults, and their children's social and cognitive development.

Our early work suggests some interesting results – in particular, that early schooling appears to have positive and long-lasting effects. However, we need to refine our methodology aimed at exploiting exogenous variation in early schooling before we can fully assess the robustness of this result.

Higher Education Reforms

With the funding of higher education (HE) again a key focus of policy-makers in 2004, we undertook careful assessment of the government's tuition fee proposals as they made their controversial passage through the parliamentary process. Our analysis set out the government's increasingly complex proposals, and discussed how the various 'concessions' introduced throughout the early part of 2004 would affect students, graduates, universities and taxpayers. As a result of this careful analysis, we were approached by the Conservative Party in the development of its own HE funding policies, to discuss informally its proposed reforms and to provide early analysis of their likely impact.

As part of our analysis of the parties' HE funding policies, we also developed an innovative methodology for estimating the full distribution of lifetime earnings profiles of graduates and non-graduates, taking into account both earnings mobility and periods of non-employment. In order to construct such earnings paths, we developed statistical techniques that allow us to account for dependence in wages between adjacent ages, using copula functions. The techniques that we use have seen widespread application in financial economics, but have seen little use in modelling earnings dynamics; a recent exception is work by Stéphane Bonhomme and Research Fellow Jean-Marc Robin.

The development of this methodology is a very big step forward, and will allow us in future to undertake a wide range of policy analyses. Already we have started to use the work to shed light on the HE funding debate, with additional funding from the Nuffield Foundation. This has enabled us to apply our methods to the UK Labour Force Survey and the British Household Panel Survey, and in so doing to assess how the repayment of student debt under different funding regimes will affect graduates at different parts of the lifetime earnings distribution.

Dearden, L., Fitzsimons, E. and Goodman, A. (2004), 'An analysis of the higher education reforms', IFS Briefing Note BN45.

Evaluation Methods

ESRC Centre resources have supported the work on empirical evaluation methods that is being undertaken at IFS. We are developing an extended overview of the growing and complex literature on empirical evaluation methods in a rigorous yet accessible form. A rigorous treatment of each subject is combined with a clear and simple discussion that illustrates some of the technicalities of evaluation methods for a wide audience of applied economists and researchers. The relative strengths and drawbacks of each method are discussed under a wide set of assumptions and for a variety of applications. The adequacy of each method under different conditions is discussed using a unified simulated example on the returns to education. We are now producing a paper targeted at a wide audience that we hope will contribute to improving the widespread empirical literature that uses these methods.

Blundell, R. and Costa Dias, M. (2005), 'Evaluation methods in empirical microeconomics', *Journal of Human Resources*, forthcoming.

Blundell, R., Dearden, L. and Sianesi, B. (2005), 'Estimating the returns to education: models, methods and results', *Journal of Royal Statistical Society*, forthcoming.

Education Maintenance Allowances

Work has continued to study the effects of education maintenance allowances. Centre researchers were part of a consortium that designed the pilot evaluation study of these allowances, which provide means-tested payments to individuals between 16 and 18 who remain in full-time education. Data have now been collected and analysed for three separate cohorts of pupils, followed for up to three years. Important findings are that these grants can significantly increase participation in post-compulsory schooling. Most of those who are attracted into education remain for the full two-year period of the subsidy, and about half opt into education from an alternative of complete inactivity.

General Equilibrium and Human Capital Policy

An exciting and new area of research at IFS is the development of general equilibrium models of heterogeneous agents. These allow the analysis of policy towards education or of welfare programmes in a dynamic context taking into account the feedback effects that changing the supply of educated workers can have. On the demand side, we model both the individual education choice and the subsequent labour market career and savings/consumption path, allowing individuals to differ in both preferences and learning ability. On the supply/production side of the market, we estimate an aggregate production function with inputs three different types of human capital, corresponding to different education levels, and one type of physical capital. Initial results have demonstrated the importance of such an approach, since the policy outcomes obtained under general equilibrium are fundamentally different from those obtained in partial equilibrium. A working paper on this topic, including a number of policy simulations, will be produced over the next year.

Mothers' Education and Child Outcomes

Does a mother's education benefit her children? This is an important question because it investigates yet another channel through which education may offer benefits. The key difficulty here is to disentangle the effect of the mother's education, which constitutes an investment, from the effect of ability. This research uses data that link mothers to their children and contain information both on the education of the former and on the performance of the latter. In preliminary results, we find that college education for the mother *causes* a significant increase in the school performance of the child.

Contacts: Lorraine Dearden, Monica Costa Dias, Emla Fitzsimons, Alissa Goodman, Costas Meghir, Barbara Sianesi

Theme D. WELFARE: ITS SOURCES, LEVEL AND DISTRIBUTION

9. Inequality and Social Welfare

Trends in Income Inequality

Centre funding allows us to provide timely assessments of developments in income inequality in Great Britain. Work during 2004 showed that the increase in inequality since the mid-1990s has been small compared with the big rise in inequality that took place over the 1980s. We also found that the small increase in income inequality since the mid-1990s reflects what has happened at the extremes of the income distribution. In the middle 70 per cent of the distribution, poorer individuals have done better than richer ones, which, on its own, would result in greater equality. However, the pattern is reversed for both the richest and poorest 15 per cent of individuals, where income growth is increasing with income. This is in contrast to the 1980s, when the incomes of richer individuals grew faster than those of poorer individuals throughout the income distribution, and income inequality rose sharply.

This finding regarding the importance of changes in top incomes echoes others' work examining the role of top incomes in driving trends in income inequality in many countries around the world (for example, the work of Thomas Piketty and Tony Atkinson). Our contribution has placed this analysis of top incomes into the context of changes across the whole population, and considered some of the drivers of these changes.

Brewer, M., Goodman, A., Myck, M., Shaw, J. and Shephard, A. (2004), *Poverty and Inequality in Britain: 2004*, IFS Commentary C96.

Goodman, A., Shaw, J. and Shephard, A. (2005), 'Understanding recent trends in income inequality', in S. Delorenzi, J. Reed and P. Robinson (eds), *Maintaining Momentum: Promoting Social Mobility and Life Chances from Early Years to Adulthood*, London: IPPR.

We have also updated and maintained our income-distribution-related resources on the web. These include our interactive income distribution model, 'Where do you fit in?', and our spreadsheet of useful statistics providing summary income inequality indices, income points and other data on the income distribution in Great Britain since 1961.

<http://www.ifs.org.uk/wheredoyoufitin/>
<http://www.ifs.org.uk/bns/bn19figs.zip>

The Role of Tax and Benefit Changes in Income Inequality Changes

With co-funding from the Nuffield Foundation, we have considered the extent to which trends in income inequality between 1979 and 2001 could be attributed to reforms of the tax and benefit system. This compares inequality in an 'unreformed' world and inequality in a world including the reforms. Conclusions on the effects of tax and benefit reforms on inequality are sensitive to the counterfactual against which the reforms are judged. If the counterfactual is that the government would have uprated all 1979 tax thresholds and benefits in line with price inflation each year, then overall reforms have had little or no effect on inequality. However, if the counterfactual is that the government would instead have uprated benefits in line with earnings and tax thresholds in line with prices, as had been the historical trend before 1979, then reforms can account for over 40 per cent of the rise in inequality over the whole period. The difference between these two counterfactuals also suggests that breaking the automatic earnings indexation of benefits was a major contributor to the growth in income inequality over the 1980s and 1990s. This work also considers which reforms to the overall tax and benefit system have had the greatest effects on income inequality.

Clark, T. and Leicester, A. (2004), 'Inequality and two decades of British tax and benefit reforms', *Fiscal Studies*, vol. 25, pp. 129–58.

Income and Expenditure Inequality

Other work co-funded by the Nuffield Foundation provided a new descriptive analysis of differences between the trends in income inequality and expenditure inequality. The latter, it can be argued, better captures inequality in permanent income. The Gini coefficient measure of income inequality rose by about 4 per cent over the 1990s, compared with 33 per cent over the 1980s. It fell marginally in the early 2000s, but income inequality remains at a near 40-year high. The expenditure Gini, in contrast, fell by around 7 per cent over the 1990s, when spending is measured including housing costs. This failed to reverse a large rise in expenditure inequality in the 1980s, such that by 1999 expenditure inequality was still 10 per cent above its 1980 level. Expenditure inequality grew less rapidly than income inequality in the 1980s, and the gap between the two widened in the early 1990s. This may be due to greater income volatility (assuming that spending reflects longer-term circumstances), changes in the availability of credit (which allows expenditure to be smoothed more easily) or changes in the pattern of expenditure towards goods that exhibit lower spending inequality. In the later 1990s, income and spending inequality moved in parallel, the reasons for which require further investigation.

Goodman, A. and Oldfield, Z. (2004), *Permanent Differences? Income and Expenditure Inequality in the 1990s and 2000s*, IFS Report R66, London: IFS.

Decomposing Permanent and Transitory Income Shocks

Although the increase in income inequality over the last 25 years in many modern economies has been well documented, attention has more recently focused on the extent to which these increases were driven by the distribution of permanent or transitory shocks to individual income processes. Cross-sectional income surveys alone cannot be used to make this distinction, and even panel data cannot distinguish unexpected or uninsured events from predictable or insured ones. Previous work at the Centre has shown how the combination of consumption and income data can reveal much more. Under an assumption about intertemporal consumption choices, such data can identify the distribution of uninsured transitory and permanent shocks to income.

Recent work assesses the accuracy of identifying income risk using income and consumption data. This work develops a specific approximation to the optimal consumption growth rule under constant relative risk aversion (CRRA) preferences and shows that this approximation can provide an accurate method for decomposing income risk. More precisely, the approximation separates the variances of the permanent and transitory components of uninsured shocks to income. This result formalises the empirical approach adopted in our previous research.

The results in this work show that a simple approximation to consumption behaviour can be used to identify the source of income risk using data on consumption inequality. The simplest approximation is based on individuals being unable to self-insure against permanent shocks but being able to insure fully against transitory shocks. This approximation implies that the cross-section variance of consumption will reflect only accumulated permanent shocks to income, and, further, the amount by which the cross-section variance of income exceeds the variance of consumption can be attributed to growth in the transitory variance. At a theoretical level, we show the order of the error of this approximation. Through simulation of individuals choosing consumption in an economy with permanent and transitory income shocks, we show

that the approximation decomposes the income risk fairly accurately and correctly identifies changes in risk over time.

Error in the approximation arises through underpredicting self-insurance against permanent shocks and overpredicting self-insurance against transitory shocks. This error implies an underestimate of the actual risk to permanent income and an overestimate of the change in the variance of transitory shocks. The approximation of the consumption rule can be made more precise if more data are available to the econometrician. The availability of asset data enables the use of an approximation allowing for partial self-insurance against permanent shocks. The importance of using this additional information depends on the extent of self-insurance: if individuals are impatient, asset holdings are limited and the simple approximation is accurate. Further, the research shows that using data on median asset holdings corrects much of the error in the simple approximation and that using data on individual asset holdings does not add much improvement beyond this.

Blundell, R., Low, H. and Preston, I. (2004), 'Income risk and consumption inequality: a simulation study', IFS Working Paper W04/26.

Meghir, C. and Pistaferri, L. (2004), 'Income variance dynamics and heterogeneity', *Econometrica*, vol. 72, pp. 1–32.

Insurance against income shocks can also be through other, possibly informal, interpersonal means, and the viability of such insurance arrangements may also depend on the persistence of the shocks concerned. With panel data on income and expenditure, it is possible to estimate parameters of income processes from income data alone, including time paths of variances of permanent and transitory shocks, and thereby to estimate the degree to which changing variances of permanent and transitory income shocks are passed through into the distribution of consumption. Work at the Centre has used US data from the Panel Study of Income Dynamics (PSID) to investigate this issue empirically. However, the limitations of the expenditure data from that source require that information be brought in from external sources such as the Consumer Expenditure Survey (CEX), and research has also investigated appropriate imputation methods for this purpose.

Blundell, R., Pistaferri, L. and Preston, I. (2004), 'Consumption inequality and partial insurance', IFS Working Paper W04/28.

Blundell, R., Pistaferri, L. and Preston, I. (2004), 'Imputing consumption in the PSID using food demand estimates from the CEX', IFS Working Paper W04/27.

Changes in the Distribution of Wages accounting for Employment Composition

There is a vast literature on the distribution of wages and the way this has evolved over time. Economies such as the US and the UK have seen large and unprecedented increases in wage inequality amongst workers over the last 30 to 40 years. These increases in inequality have been associated with increased returns to education, cohort effects and increases in the returns to unobserved skill.

In parallel with these momentous changes in the distribution of observed wages, employment rates for men and women, as well as the composition of the workforce, have changed. For example, employment for men aged 22 to 59 in the UK has decreased from 93 per cent in 1978 to 83 per cent in 2000. The decline of male employment occurs at all ages, and so reflects more than the increase in early retirement, although the decline is particularly pronounced for men over 50. Women saw an increase in their employment, especially for those below 30. The change in employment has been heavily skill biased. Although male employment has declined for all education groups, the highest decline has been for the least-educated group. For women, most of the increase in employment can be accounted for by the increase in employment of women with more than the statutory minimum level of education.

The employment rate for women with only statutory schooling has shown a slight decline over the entire period.

Just as observable characteristics differ between workers and non-workers, those not working may have different unobserved skill characteristics from those working. Any change in employment may thus affect the distribution of wages directly through composition effects. Wage inequality amongst workers could increase if employment rates have fallen less for those at the top and bottom of the skill distribution, without any change in the underlying structure of demand or distribution of skill. This point has a bearing on the interpretation we give to these observed changes in the distribution of wages. For example, in order to interpret the change in return to education as being driven by an increase in the relative demand for more highly educated workers (due, say, to skill-biased technical change), we need to establish that the change in the observed return is not an artefact of changes in the composition of employment.

The aim of our work in this area has been to analyse wage dispersion and its evolution, allowing for the sample selection induced by individuals' non-employment. To address the issue of selection without relying on strong assumptions, we use bounds to the wage distribution and its quantiles. We start from the worst-case bounds. We then employ a number of restrictions motivated by economics to tighten the bounds. Our approach allows us to obtain very tight bounds on parameters of interest, in some cases close to point estimates, while preserving the robustness of a non-parametric approach and imposing only relatively weak and transparent restrictions.

The empirical analysis focuses on inequality, on wage differentials related to education, gender and age groups and on the way these have changed over time. We seek to bound relevant aspects of the wage distribution accounting for the presence of non-employment in the labour market. As a data source, we use the UK Family Expenditure Survey from 1978 to 2000.

At least for analysing means, the selection problem is well understood in the literature and it is usually dealt with either in a parametric or in a non-parametric framework. Recent work at the Centre (Blundell, Reed and Stoker, *American Economic Review*, 2003) shows how important such selection issues can be. That work used changes in the policy framework for out-of-work welfare benefits, exploiting the differences generated by the variability in housing costs across individuals, to sort out composition effects from genuine wage growth. It found that the picture of wage growth is very different after accounting for selection effects.

The main conclusions of existing studies of the distribution of wages in the UK – namely, that inequality amongst men has risen both overall and within groups, that differentials between different education groups have risen (at least for men) and that differentials have narrowed between some groups of men and women – are shown to be robust to selection. The lowest bound to the change in the interquartile range of male wages shows it increasing by almost a half from 0.437 in 1978–79 to 0.631 in 1998–2000. Educational differentials amongst younger men (aged under 40) have increased by at least 0.14 log points, and younger women with less-than-college-level education saw their wages rise at least 24 per cent faster than their male counterparts. These results are robust to selectivity bias, subject, of course, to our assumptions.

Blundell, R., Gosling, A., Ichimura, H. and Meghir, C. (2004), 'Changes in the distribution of male and female wages accounting for employment composition using bounds', IFS Working Paper W04/25.

Poverty in Britain

Centre researchers have also continued to analyse changes in poverty in Britain. We provided a timely analysis of the new ‘official’ child poverty measure, which has been chosen by the government to monitor progress between 2004 and 2010. We showed that defining poverty with incomes measured before housing costs changes the geographical distribution of poverty (compared with using incomes after housing costs are deducted), with proportionately fewer poor children to be found in London and the South-East under the new measure. Children in poverty are also slightly more likely to be in households where no parents work under the new measure than was previously the case. However, we found that historical trends in child poverty are very similar whether one uses the government’s old or new definition of poverty.

We have also continued our work assessing the government’s child poverty targets. Centre researchers played a major role in the Work and Pensions Select Committee’s investigation into child poverty in the UK, giving oral evidence in early 2004 and supplying several background notes. In particular, the Committee’s conclusion that ‘the Government’s target of reducing child poverty by a quarter by 2004 is likely to be met’ was largely based on Centre-funded work that evaluated the impact on child poverty of the changes to tax credits announced in the 2003 Pre-Budget Report (see paras 133–6 of HC (2003–04) 85-I). We have continued this work by examining how child poverty might change beyond 2004–05, given that the government’s commitment to over-index certain parts of the tax credit system lasts only until April 2005.

We have also continued our analysis of trends in pensioner poverty, showing that a pensioner drawn at random from the population is now no more likely to be in poverty than a non-pensioner, when poverty is defined relative to the threshold of 60 per cent of median income after housing costs. We were also the first to point out that relative poverty has not fallen amongst non-parent non-pensioners, a group that has been less favoured by government tax and benefit policies than those in households with children and pensioner households.

Brewer, M. (2004), ‘Will the government hit its child poverty target in 2004–05?’, IFS Briefing Note BN47; published as EV 118 in House of Commons papers 2003–04 85-III, *Child Poverty in the UK, Vol. 3, Oral and Written Evidence*.

Brewer, M. (2004), *Child Poverty and Tax Credit Changes*, published as EV 119 in House of Commons papers 2003–04 85-III, *Child Poverty in the UK, Vol. 3, Oral and Written Evidence*.

Brewer, M. (2005), ‘Maintaining momentum in tackling child poverty’, in S. Delorenzi, J. Reed and P. Robinson (eds), *Maintaining Momentum: Promoting Social Mobility and Life Chances from Early Years to Adulthood*, London: IPPR.

Brewer, M., Goodman, A., Myck, M., Shaw, J. and Shephard, A. (2004), *Poverty and Inequality in Britain: 2004*, IFS Commentary C96.

Contacts: Mike Brewer, Alissa Goodman, Andrew Leicester, Jonathan Shaw, Andrew Shephard

10. Welfare Measurement and Cost of Living

Welfare Rankings from Multivariate Data: A Non-Parametric Approach

Welfare depends on many factors, yet typically economists focus on single measures of well-being such as income or expenditure when they want to compare individuals, areas or countries. Attempts to look at multiple indicators do exist, such as the annual United Nations publication of the Human Development Index, which includes life expectancy and schooling alongside GDP measures to derive a ranking of nations’ welfare. Yet such measures rely on a specific way of adding up the factors they include, and using different weights on the various indicators may generate different, but equally valid, rankings. The way in which the weights

are chosen could have enormous incentive effects for policy-makers, so this issue is hugely important. This project aimed to develop a non-parametric way of deriving welfare rankings that would hold for all possible ways in which the indicators could be aggregated, subject to two relatively standard conditions. This makes it possible to avoid choosing an essentially arbitrary weighting scheme. Our approach focused on determining the ‘distance’ between each observation in the data and a set of points representing the best- and worst-off reference observations. We looked at the impact of changing the way we measured the distance, changing the indicators and changing the set of reference points. We showed how the technique could be applied to data at the household, regional (state) and international levels and suggested that income alone need not be a good indicator of welfare. This work is joint with Gordon Anderson (Toronto).

Anderson, G., Crawford, I. and Leicester, A. (2004), ‘Welfare rankings from multivariate data: a non-parametric approach’, mimeo, IFS.

Non-Parametric Bounds to Demand Curves

This research is joint with International Research Fellow Martin Browning (Copenhagen). We have applied non-parametric economic restrictions (Afriat inequalities) and non-parametric statistical methods to the problem of recovering Marshallian demand curves. This allows positive predictions to be made whilst ensuring theoretically consistent, but otherwise unrestricted, commodity substitution patterns. We show that these methods always weakly improve the bounds recovered by previous authors and show how additional (testable) restrictions on functional structure can further tighten the bounds we recover. We have applied these ideas to UK consumption data.

Blundell, R., Browning, M. and Crawford, I. (2004), ‘Best nonparametric bounds to price responses’, presented at the European Meetings of the Econometric Society, Stockholm, August 2004.

Non-Parametric Methods for the Consumer Characteristics Model

This work is also joint with International Research Fellow Martin Browning (Copenhagen). Characteristics models have been found to be useful in many areas of economics – for example, in the valuation of the welfare effects from the introduction of a new good. However, their empirical implementation tends to rely heavily on assumptions about functional form. In this research, we developed a revealed-preference-based non-parametric approach to characteristics models. We derived the minimal necessary and sufficient empirical conditions under which data on the market behaviour of individual, heterogeneous, price-taking consumers are non-parametrically consistent with the consumer characteristics model. We also developed methods to deal with missing prices that occur, for example, because the consumer does not buy a particular good in a given period. When the revealed preference conditions hold, we showed how information may be recovered on individual consumers’ marginal valuations of product attributes. In some cases, marginal valuations are point identified; in other cases, we can only recover bounds. When the conditions fail, we highlighted the role that the introduction of unobserved product attributes can play in rationalising the data. We implemented these ideas using consumer panel data on the Danish milk market.

Blow, L., Browning, M. and Crawford, I. (2004), ‘Nonparametric methods for the characteristics model’, CEMMAP Working Paper CWP18/04.

Latent Separability and Demand System Rank

This work considers the observable consequences of a model of consumer behaviour in which the consumer’s utility function is latently separable. The notion of latent separability was

introduced in papers by Gorman in 1968 and 1978 and further developed by Blundell and Robin (*Econometrica*, 2000). So far, the characterisation of the conditions for latent separability has been parametric. Our work has identified empirical necessary and sufficient non-parametric conditions for latent separability. The research has developed empirical tests for the consistency of price and demand data with a model of consumer preferences with this functional structure. It also includes tests of the characteristics model and weak separability as special cases. The work so far has *not* been able to show how either the number or membership of latent groups might be identified non-parametrically. We are currently exploring the close relationship between latent separability and demand system rank.

Crawford, I. (2004), 'Necessary and sufficient conditions for latent separability', IFS Working Paper W04/17.

UK Household Expenditure Data

The Family Expenditure Survey (FES) remains the primary source of historical UK household data on expenditure. In April 2001, the FES and the National Food Survey were combined to form the Expenditure and Food Survey (EFS). In addition to this structural change, a further major change was the introduction of a new coding frame for spending items. These new codes use a framework called the Classification of Individual Consumption by Purpose (COICOP). Though its sample size can no longer compete with that of some newer surveys, the FES/EFS provides a consistent annual cross-section of UK households from 1961 to 1999–2000. This makes it an unrivalled source of information on demographic, social and economic changes that have occurred over the last 40 years. Centre funding has allowed IFS to devote considerable resources to making the FES/EFS data consistent and accessible across time. The major changes to the survey in 2001–02 required additional work to maintain this consistency and to modify existing programs that generate generic datasets. As a result of this effort, we now have consistent data up to 2002–03 and (provided there are no further major changes) we will be able to process further years of data relatively easily.

Contacts: Laura Blow, Ian Crawford

8. FINANCIAL STATEMENT

The table below summarises how the ESRC's financial contribution to the Centre was spent. The ESRC Centre contributes around 25 per cent of IFS income. The remainder is derived from IFS membership subscriptions, publication sales, conference income and general project funding. In addition to other ESRC support, general project funding comes from research trusts (such as the Nuffield Foundation, the Leverhulme Trust, the Gatsby Foundation and the Joseph Rowntree Foundation), government departments (such as the Department for Work and Pensions, HM Treasury, the Department for Education and Skills, the Department for Trade and Industry, the Legal Services Commission and the Inland Revenue), the European Union, the World Bank and other bodies, including the Bank of England and BBC TV. In addition, the Tax Law Review Committee was supported by a consortium of private sector firms.

Salary costs make up the bulk of expenditure within the Centre. IFS determines its own salary structure through internal discussion with staff under delegated authority from its Trustees, with negotiations taking into account prevailing levels of remuneration in both the Civil Service (primarily the Government Economic Service) and universities. IFS operates a personal pension scheme under which it makes a contribution of up to the maximum allowed under Inland Revenue rules.

Other expenditure covers payments to Research Fellows and Associates (eight are financed at least in part by the Centre), the cost of the Research Scholars (including their fees paid to University College London), secretarial costs, overheads (at an average of some 50 per cent of direct salaries), computing, travel and miscellaneous costs.

RESEARCH CENTRE BREAKDOWN OF COSTS, 2004 (January to December 2004)

Research staff	382,886
Research Fellows and Associates	14,300
Research Scholars	46,280
Other staff	24,248
Total staff	467,714
Computing costs	18,775
UK travel	6,751
Overseas travel	17,810
Overheads	238,534
Total costs	749,585
IFS contribution to cover accommodation, library, insurance and professional fees	104,365

9. PERFORMANCE INDICATORS

A. Publications

Centre publications during 2004 reflect our objectives of providing high-quality microeconomic research on issues related to public policy and of using the findings from this research to inform and engage in public policy debates.

Centre researchers have published over 50 articles in refereed academic journals and around 20 chapters in edited books. These publications cover the full range of our research programme, including, for example, papers on:

- active labour market programmes (e.g. B. Sianesi, ‘An evaluation of the Swedish system of active labour market programmes in the 1990s’, *Review of Economics and Statistics*, 2004, vol. 86, pp. 133–55);
- consumption (e.g. C. Meghir, ‘A retrospective on Friedman’s theory of permanent income’, *Economic Journal Features*, 2004, vol. 114, pp. F293–306);
- household wealth (e.g. J. Banks, R. Blundell and J. Smith, ‘Wealth portfolios in the United Kingdom and the United States’, in D. Wise (ed.), *Perspectives on the Economics of Ageing*, University of Chicago Press, 2004);
- pensions (e.g. R. Blundell, C. Meghir and S. Smith, ‘Pension incentives and the pattern of retirement in the UK’, in J. Gruber and D. Wise (eds), *Social Security and Retirement around the World: Micro-Estimation*, University of Chicago Press, 2004);
- company taxation (e.g. M. Devereux, R. Griffith and A. Klemm, ‘Why has the UK corporation tax raised so much revenue?’, *Fiscal Studies*, 2004, vol. 25, pp. 367–88);
- R&D and productivity (e.g. R. Griffith, S. Redding and J. Van Reenen, ‘Mapping the two faces of R&D: productivity growth in a panel of OECD industries’, *Review of Economics and Statistics*, 2004, vol. 86, pp. 883–95);
- education (e.g. S. Machin, S. McNally and C. Meghir, ‘Improving pupil performance in English secondary schools: Excellence in Cities’, *Journal of the European Economic Association*, 2004, vol. 2, pp. 569–606);
- income risk (e.g. C. Meghir and L. Pistaferri, ‘Income variance dynamics and heterogeneity’, *Econometrica*, 2004, vol. 72, pp. 1–32);
- inequality (e.g. A. Goodman and Z. Oldfield, *Permanent Differences? Income and Expenditure Inequality in the 1990s and 2000s*, IFS Report R66, 2004);
- cost-of-living measurement (e.g. I. Crawford and I. Image, ‘The retail price index and the cost-of-living index: testing for consistency in theory and practice’, *Fiscal Studies*, 2004, vol. 25, pp. 79–91).

Centre publications have ranged from scientific papers in leading general journals such as *Econometrica*, the *Review of Economic Studies* and the *Journal of Political Economy*, through papers in leading field journals such as the *Journal of Public Economics*, *International Tax and Public Finance* and the *Journal of Development Economics*, and less technical papers and surveys in journals such as *Fiscal Studies*, *Economic Policy* and the *Oxford Review of Economic Policy*. Centre researchers have also written chapters for books such as: *Seeking a Premier League Economy: The Economic Effects of British Economic Reforms, 1980–2000*, edited by Richard Blundell, David Card and Richard Freeman; *Measuring the Tax Burden on Capital and Labour*, edited by Peter Sorensen; and *Perspectives on the Economics of Ageing*, edited by David Wise.

Centre researchers have also contributed non-technical Commentaries, Reports and Briefing Notes on topical policy debates. These include a Commentary on poverty and inequality in

Britain, a Report on consumption trends in the UK, and online Briefing Notes on higher education funding reforms, public spending proposals, child poverty targets, financial security in retirement, a tax on fatty foods, outsourcing and offshoring of business services, work incentives of parents, and government support for innovation in the UK.

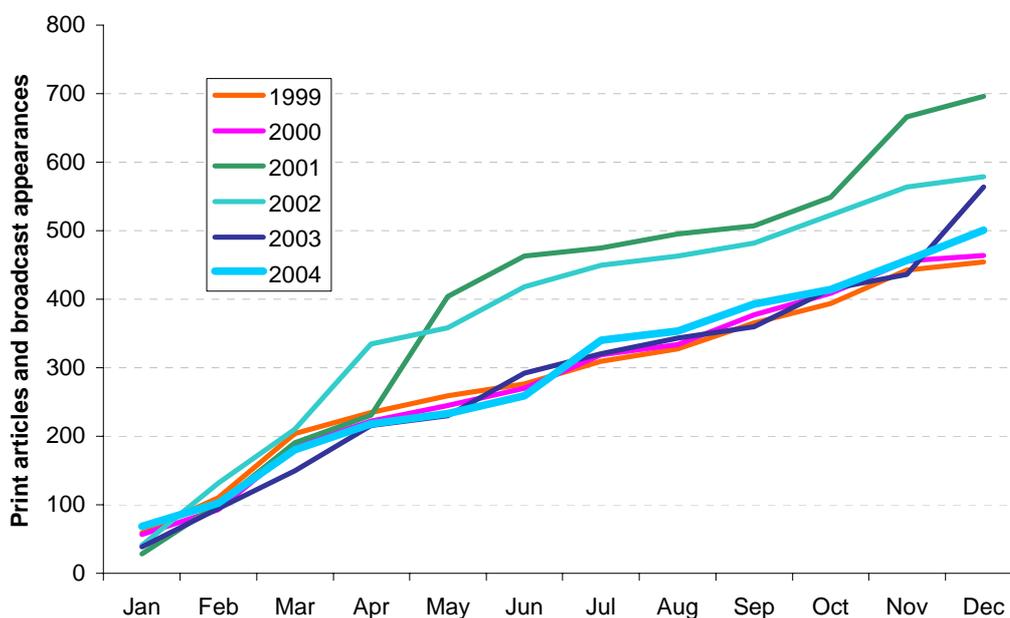
In the next section, we describe our efforts to disseminate our findings to a wide range of research users.

B. External Relations

The research and support of the ESRC Centre for Public Policy play a pivotal role in IFS's contribution to public policy debate and to its participation in cutting-edge academic discourse.

On the policy side, the Green Budget 2004, supported by the ESRC, was a highlight, bringing together work on the public finances, public services, personal tax reforms and company taxation. The main findings were presented to an audience of civil servants, journalists, academics and interested parties from the professions and commerce. As usual, we held briefings for journalists after the Budget and the Pre-Budget Report. Our responses to the Budget and the Pre-Budget Report are discussed in more detail in our Communication Highlight about public finances analysis in Appendix 1.

Figure 1. Cumulative press coverage, 1999–2004



Centre funding has given us the crucial resources we need to examine issues thoughtfully as they arise and respond quickly to current debates. During 2004, these included the debate about higher education funding, challenges facing the government in the Spending Review, spending proposals by the Conservative Party, and developments in child poverty. At the appropriate times, Briefing Notes were published on the IFS website about each of these subjects.¹

¹ See <http://www.ifs.org.uk/publications.php?type=bn> for a full list of Briefing Notes.

Press coverage over the year was spread between events such as the Budget and coverage of IFS reports. As Figure 1 shows, the pattern of press coverage was quite steady throughout the year, possibly reflecting our efforts to generate more coverage from our won research findings as well as to respond to policy-related events. As in previous years, Centre staff spoke to print journalists and took part in broadcast interviews whenever possible. As part of our external relations policy, we continued to cultivate links with journalists through our press office and to take advantage of these contacts to help increase coverage of our research findings.

With funding from the ESRC, we were able to organise a broadcast training day, tailored to the needs of IFS staff. As part of the training, we had engaged Liam Halligan from Channel 4 to provide staff with an opportunity to practise interview technique in front of a camera and to discuss the recordings with him and with colleagues. The training catered for both new and experienced members of staff and will stand them in good stead during the forthcoming election campaign, when we expect to have to deal with heightened media interest.

To ensure that Centre research is influential at the highest level, members of staff meet regularly with civil servants and MPs to discuss current policy questions. Over the period covered by this report, a number of staff have given evidence to Select Committees, and one, Carl Emmerson, has been acting as a Special Adviser to the Work and Pensions Committee. Staff have also agreed to meet on many occasions with representatives of all three main political parties and with interest groups to discuss economic questions and have spoken at events organised by such groups. In addition, a range of visitors from overseas governments have visited us to gain insight into our analysis of the UK's tax system. A number of staff members were invited to visit governments overseas, for example Costas Meghir, who spent several days in Argentina speaking to officials at the highest level, at the instigation of the British Foreign Office and British Embassy in Argentina.

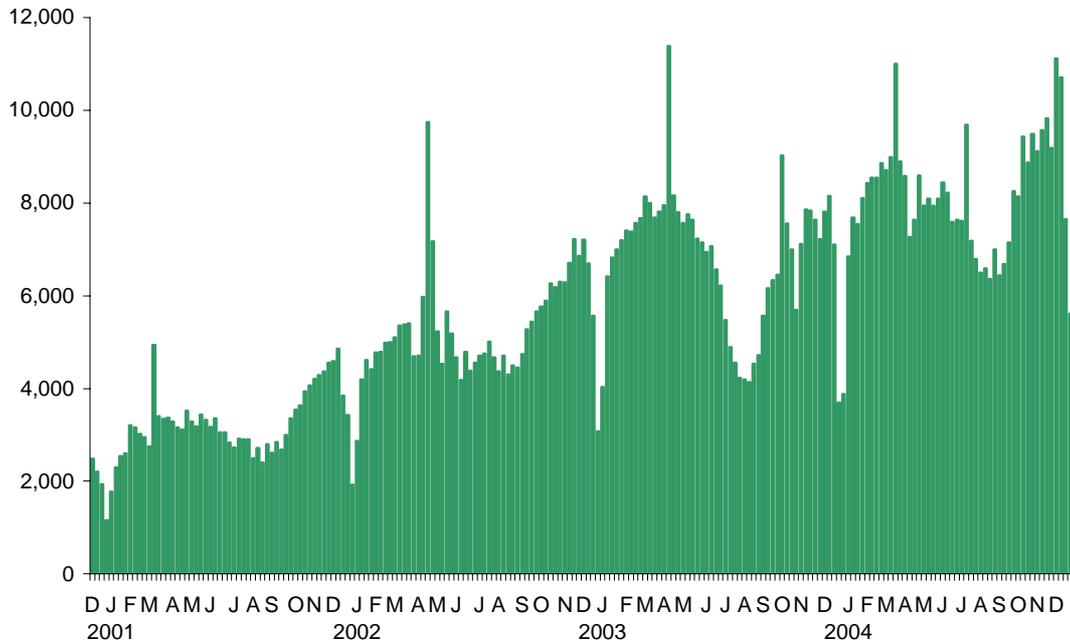
In the academic arena, Centre researchers attended a variety of conferences in the UK and abroad, presenting papers and networking with academics from a range of countries and disciplines. Key conferences hosted at IFS included the Gorman Memorial Workshop, held at the British Academy. The workshop was held in honour of the late Terence Gorman; Daniel McFadden (UC Berkeley), James Heckman (University of Chicago), Angus Deaton (University of Princeton) and Martin Browning (University of Copenhagen) each gave a paper. There followed discussion amongst the group of distinguished academics who attended the event.

Centre researchers presented academic papers and gave lectures at a wide variety of conferences and seminars in the UK, throughout Europe and further afield. Our network of International Research Associates provides the basis for international collaboration across a range of subjects. These and other overseas academics made a series of visits to IFS over the year, and a number of Centre researchers made reciprocal visits, working together with overseas colleagues both informally and formally through funded projects.

Many IFS and Centre staff are also involved in editing journals, submitting and refereeing articles, both for *Fiscal Studies* and outside journals, and serving on committees for UK and international conferences. In August 2005, the 9th World Congress of the Econometric Society will be held at University College London, and Centre Researchers Orazio Attanasio, James Banks, Richard Blundell, Rachel Griffith and Costas Meghir, as well as other Centre staff, are taking leading roles in the organising committee. We plan to run a series of policy sessions at this conference with some financial support from Blackwell Publishers, who will be publishing *Fiscal Studies* from the start of 2005. The sessions will be attended by delegates at the conference as well as by local civil servants and journalists.

The IFS website has recently been redesigned, and the annual number of visitors continues to increase and currently stands at about 33,000 per month. Figure 2 shows the number of visitors since 2001. IFS Briefing Notes, Press Releases, Working Papers and most Commentaries are now made available free of charge online.

Figure 2. Weekly unique visitors to the website, 2001–2004



Work has been under way to redevelop the website for the last two years. A contribution from the ESRC towards communications helped us to complete the redesign, and the new site was launched in November 2004. The site is now generated dynamically from a database, which contains details of outputs, staff and visitors, events, projects and funding bodies. This replaces a collection of static pages, which was becoming too large to keep up-to-date easily. Further discussion of the new website can be found in our Communication Highlights in Appendix 1.

10. A LOOK FORWARD

This section provides a look forward to some of the new research planned at the Centre in the near future. We organise this discussion around the six areas that will form the basis for the management of the Centre under our new contract with the ESRC from April 2005.

A. Labour Supply and Retirement

Modelling Labour Supply Decisions within the Household

Recent changes to UK tax credits have affected joint labour supply decisions within the household. Previous research at the Centre has formulated microeconomic models that account for joint decision-making under different modes of household behaviour. Our existing microsimulation model assumes that couples make choices as a single decision-making unit. With support from the European Commission in 2001, we began to develop richer models that allow cooperative decision-making. We plan to develop these models to examine the impact of policy reforms and their welfare consequences, focusing first on past reforms where we can use past data to validate the structural collective labour supply model.

Estimating the Demand for Childcare

The government has recently announced a new strategy for increasing the provision and reducing the cost of formal childcare, in order to help parents work, including extra support through the tax credit system. It is clear, though, that policy-makers lack basic information on the price and income elasticity of the demand for childcare, let alone how the demand for childcare is linked to its quality or to labour supply decisions. We will develop a model that takes into account the interactions between taxes, benefits (including childcare subsidies) and the economic and family environment, allowing for family-provided childcare and public-sector and market arrangements. The project will shed light on the relationships between labour market choices, the role of the extended family in providing childcare, and the sensitivity of childcare quality and quantity to wages. It will allow us to measure the impact of changing circumstances on demand for childcare, on child welfare and on the labour supply of mothers (both single and those in couples). We are currently exploring the use of the New Earnings Survey to provide detailed geographical variation in the wages paid to childcare workers and those in similar occupations, which can act as an instrument for the price of childcare.

Policy Evaluation

We will combine ESRC Centre resources with other funding to develop a framework for evaluating the short- and long-term effects of taxes, wage subsidies and welfare programmes that form the backbone of public policy in the UK and many other countries. These are often designed with redistribution and poverty alleviation in mind and, either by design or inadvertently, affect work, education and saving incentives. Major policies we have in mind are the tax credits and the jobseeker's allowance as well as the progressive tax system that is used to fund public expenditure. More broadly, we can consider changes in the design comparing for instance such UK policies with those found in the US (earned income tax credit) and elsewhere. Such programmes create a complex relationship between gross and net earnings over the life cycle, thus affecting the value of human capital and the marginal value of working an extra unit of time.

A major goal of this research will be to understand and assess the impact of this sort of tax/benefit system on agents' work, education and saving decisions as well as on the labour

market as a whole. The complexity of the impacts calls for a structural evaluation if they are to be fully understood. We intend to model individual behaviour in a life-cycle setting, accounting for the presence of taxes and benefits reflecting current policies. We will then incorporate such a model of individual choices in a general equilibrium framework, thus allowing for a full account of feedback effects from different policies. The model can then be used to understand the distributional and welfare effects of major policies and to compare different policy alternatives.

Retirement

In research that will be co-funded by a specific ESRC grant, Centre researchers will use the first two waves of the English Longitudinal Study of Ageing (ELSA) to look at transitions in economic activity of those aged 50 and over between 2002 and 2004. We will examine the extent to which changes in labour market activity of an individual are associated with financial incentives (in particular from private pension arrangements) and consider the effects of controlling for health and health shocks on the estimation of such effects. In related work, we will be undertaking a comparative analysis (along with researchers from RAND (Los Angeles)) based on ELSA data and equivalent data from the US Health and Retirement Study. This research will look at the extent to which movements out of the labour market are associated with changes in partner's labour market activity, and the incentives inherent in each individual's pension arrangements.

B. Education and Human Capital

Our ongoing work will continue to assess the relative effectiveness of interventions at different life-stages (pre-school, school, tertiary education or during working life) and how best to spend resources to promote human capital accumulation.

Pre-School and Schools

Our early research using the National Child Development Study (NCDS) has suggested that early human capital interventions amongst this cohort had long-lasting effects. However, in order to understand fully whether this is the case, we need to employ methodologies to overcome the fact that children who attend early education may appear to do better simply as a result of unobservable characteristics that are correlated with educational attendance. Our work going forward will focus on employing such methodologies. First, still working with the NCDS, we will exploit exogenous variation in the availability of early education in order to test the robustness of our current results. In addition, our future work will focus on more recent cohorts, aided by the availability (subject to relevant permissions) of large-scale individual-level administrative data – for example, the data on all school pupils contained in the National Pupil Database (NPD) and the Pupil-Level Annual School Survey (PLASC). These datasets will in many cases be linked into new survey data coming on stream, such as new waves of the Millennium Cohort Study (MCS) and the Longitudinal Study of Young People in England (LSYPE). In addition, census data with very detailed local area information can be combined with these datasets to add greatly to the richness of our possible analyses. Using these datasets, we will aim to exploit more recent variation in the availability of pre-school education, for example, focusing on the varying degrees of free nursery education entitlements of 3- and 4-year-olds in different local education authorities.

We will also investigate how parents choose schools based on an equilibrium sorting model, using data including school-level information and local area characteristics. This will provide a framework to understand how local policies can change school structures and how peer effects may operate.

Wage Progression

Human capital accumulation continues when the individual enters work and is reflected in wage progression. Welfare-to-work-type wage subsidies rely on this for their longer-term success and sustainability. We will address these issues within a life-cycle model of wage growth and job/employment choice using existing data from a number of countries. Our collection of data for the evaluation of the Employment Retention and Advancement programme – which offers incentives for workers to improve their wages – will allow us to estimate the extent to which individuals are able to achieve wage growth either through search for better matches or through on-the-job learning.

Other Issues

Education policy will also be considered in a general equilibrium context, since large feedbacks from changes in the supply of educated workers can undo apparently large direct effects. Using microeconomic data, we will continue our progress in estimating dynamic equilibrium models of individual behaviour and of the demand for workers with different education levels.

We will also further extend our research in developing countries, where our approach can fruitfully inform development policy. We have been collecting panel data on households to evaluate a major programme of nutritional and educational support in Colombia. We will be studying the extent to which these subsidies affect development, health and educational outcomes for children. We are also planning further data collection in these deprived areas.

C. Competitiveness, Productivity and Firm Performance

Service Sector Productivity

The US has experienced strong productivity growth in the retail sector, which has not been mirrored in the UK. New work will examine the main determinants of productivity growth in retail firms, focusing on supermarkets. Possible reasons for poor productivity performance in UK supermarkets include slower take-up of ICT, lack of competition, outdated management methods and more stringent UK planning regulations. Research funded by AIM is using data on individual supermarkets and individual consumer purchases to shed light on these issues.

Work funded by AIM and carried out with Andy Neely (AIM, Cranfield School of Management and London Business School) is evaluating the effect of the Balanced Scorecard strategic performance measurement system on performance, in conjunction with a large UK wholesale firm, which has piloted this system in one of its divisions.

Outsourcing and Offshoring

Little is known about determinants of productivity in service sectors. Business services is one of the largest service sectors, and has experienced considerable labour productivity growth in the UK over the last decade, substantially closing the productivity gap with the US, France and Germany. Using firm- and establishment-level data, we will investigate the determinants of productivity growth. How important have factors such as technology, capital deepening, skill-mix, competition and outsourcing been in driving productivity? Outsourcing may affect the nature of competition, and can also lead to changes in productivity if, for example, returns to scale are important or ownership incentives affect innovation rates in these industries.

Trade Integration and Trade Policy

The UK and US differ dramatically in terms of where their imports originate. Likely reasons include both policy – i.e. differences in UK and US tariff structures – and geography, implying differences in transportation costs. This research aims to measure UK and US trade patterns and those in comparator EU countries, and to explain why these trading patterns differ. It also aims to assess whether current US trends, such as the rapid rise in imports from low-wage countries such as China and India, provide a reasonable guide to the future evolution of UK trade.

Product Market Competition, Entry and Innovation

Work funded by the European Commission and carried out jointly with researchers at the Centre for Economic Performance will look at the effect of product market reforms on innovation and productivity performance across EU countries. We will use country- and industry-level data to examine the impact of exogenous product market reforms, such as the EU Single Market Programme, on product market competition, and subsequent effects on innovation performance, using data on R&D, patents and productivity performance across countries and industries. Related work will look at the interactions between product market reforms and regulations in the labour market.

Mapping Innovation in the UK

Work using ONS micro data on R&D activity will describe the structure of UK R&D and its relationship with the location of productive activity. For example, to what extent is R&D outsourced, carried out in separate research facilities within the same firm, or co-located with production activity? This research will also examine the relationship between university-funded research and private sector R&D. The work is co-funded by the Gatsby Charitable Foundation.

D. Consumer Demand, Competition Policy and New Goods

Understanding how consumers make decisions and what affects their behaviour is of key importance across a wide range of policy issues, from the analysis of indirect taxation to the assessment of competition policy. Over the next year, we will put substantial resources into setting up new data on consumer spending. These data are at a much finer level of disaggregation than other data sources and they contain information on the same households over a long period of time. The data contain linked information on both households' purchases and characteristics and the firms from which they purchase. The data also contain information on the unit price that the household paid for each good purchased. Previous consumer spending data available to us (for example, the Expenditure and Food Survey) contained information only on household expenditure, and therefore only average prices from the UK retail price index could be used in analysis. The availability of specific household prices and detailed information on goods and firms will enable us to model consumer and firm behaviour in much greater depth than previously, to make more detailed welfare comparisons and to use more robust econometric methods to do so.

Centre researchers will work on modelling the pricing decisions of UK supermarkets, for which a good characterisation of consumer behaviour is essential. This is key to understanding how competition works in this industry, which has repeatedly been investigated by the UK anti-trust authorities. Specific projects we plan to start over the coming year include:

- (i) Work looking at the impact that the entry of a new store has on consumer welfare. In particular, we will be interested in what impact the rapid increase in small convenience

stores owned by the large retail firms (Tesco and Sainsbury) on the high street have had on prices and consumer choice.

- (ii) Most current models of supermarket pricing behaviour assume that consumers behave according to the 'one-stop shopper' model – that is, they do most of their shopping at a single store. This assumption has a substantial impact on the predictions these models make. We will examine the empirical evidence over whether this is an accurate description of consumer behaviour, and, if not, consider what alternatives would be better.

The drop in expenditure just after retirement has long puzzled economists (known as the retirement-savings puzzle). Using these new consumer data, we will look at what happens to consumption around retirement and ask questions such as whether people stock up on durables just before (or at) retirement, and what types of goods they increase or decrease their consumption of.

The issue of whether poor people pay more for goods and services than rich people is hugely important for welfare analysis. There are several possible reasons why the poor could pay more. They may not have access to a car or reasonable public transport, so that their search options are limited. They may not be able to buy in bulk and so pay a higher unit price. Alternatively, firms may be able to price discriminate: if the poor have a lower price elasticity of demand for certain basic items (in particular food), then, if possible, firms would like to charge more to the poor in order to extract consumer surplus. Using these data, we will try to understand whether poor people do pay more and, if so, what the main reasons are for this.

The contribution of new products to economic welfare is a central question for understanding the growth of modern economies. The key variable to be estimated in order to calculate the welfare gain derived by consumers from new products is their reservation price for the product – the maximum amount they would have been willing to pay for the good – in the period before it was introduced. To conceptualise this problem, economists often use a characteristics model of demand where welfare derives from a number of underlying characteristics that are embodied in varying amounts in market goods. A new good can then be thought of as a combination of characteristics that was not previously available. If the individual characteristics can be priced, then the reservation price of a new good can be estimated. Previous work has used parametric models of preferences to estimate reservation prices, and so the results are partly dependent on the functional form chosen. We will employ revealed preference conditions (which do not impose any particular parametric form) to price characteristics using information from these new consumer data on purchasing behaviour before and after the introduction of a new good.

E. Dynamics of Inequality, Saving and Wealth

The evolution of inequality is a key focus for the Centre's research programme going forward. A clear understanding of the degree of inequality, and how far this inequality reflects differences in welfare between individuals, should inform governments on the extent to which they choose to redistribute – for equity reasons – through the tax and benefit system, or to intervene in health, education, training and other markets. In addition to continuing to document the evolution of inequality in the UK and other countries, we will investigate in depth the specific market failures that mean that unexpected changes in income (which are potentially insurable) lead to consumption changes, the welfare costs of these market failures, and the types of mechanisms and markets that individuals have with which to cope with unexpected changes.

While economists are used to thinking of economic risk as being determined mainly by economic variables, our future research will also consider the impact of key events, such as marriage, fertility, divorce and morbidity. These are all important and uncertain determinants of the well-being of individuals, as they affect the way in which expenditure is converted into welfare. At the same time, some of these key events enable individuals to share risk and provide coping mechanisms. Therefore the possibility of these events could have an effect on current decisions. Our aim is to understand the interactions between these events and economic decisions. For instance, the possibility of future marriage might affect the intertemporal allocation of consumption because of the economies of scale that marriage affords. The risk of divorce could have effects on current consumption, which may increase since debts/savings will be shared upon divorce.

A further key issue on which we will focus research is that of pension reform and the adequacy of retirement saving. Our research has shown that individuals in the UK who do not have a pension also have very little financial wealth. We will build on this work to determine whether individuals save enough for their retirement. Part of the analysis will look at changes in consumption around retirement, both in the UK and in other countries where panel data on consumption are available. Using the detailed breakdown of goods to classify them as work-related, leisure-related or general, as well as observed behaviour before retirement, we will assess how much of the change in consumption is consistent with changes in circumstances and how much is due to unexpected income changes.

Ongoing work at the Centre has begun to study housing in the context of the life-cycle choices of households and as a component of households' wealth. The extent of house price volatility in the UK and the nature of housing providing a flow of essential consumption services make this a key area of policy concern. Our research will develop a detailed analysis of housing as an asset and as a consumption good and of the substitution patterns between housing and other consumption services.

F. Public Finances

In the run-up to the forthcoming general election, we will be producing analyses of both Labour's economic record to date and the fiscal implications of each of the major parties' proposals for reform going forwards. This research is to be co-funded by a specific ESRC grant. In addition to producing a set of online Briefing Notes during the election campaign to inform debate on economic policy, after the election we will pull together the work on Labour's reforms from 1997 to 2005 into a single piece. Further analysis of the evolution of the public finances will be published in our annual Green Budget, which in 2005 was co-funded for the first time by Morgan Stanley. In assessing whether or not the Chancellor is complying with his fiscal rules, we will also continue to develop further our approach to estimating not only point estimates of particular fiscal aggregates but also the magnitude of the risks to those forecasts.

A separate piece of analysis will investigate the role of fiscal policy as a stabilisation tool when monetary policy is not available. To do this, we will develop a dynamic, life-cycle model of consumption decisions and examine the impact of two main instruments: indirect taxation and interest taxation, both lasting for a limited, typically short, period of time. Both anticipated and unanticipated policies will be studied.

11. REQUESTS TO THE BOARD

None.

Appendix 1. HIGHLIGHTS FOR THE RESEARCH PRIORITIES BOARD: Scientific Advances and Communication

Scientific Advances

Centre researchers have been involved in a number of scientific advances over the past year. Generally these are described in Section 7 and in the list of published outputs. Here, we focus on three advances that signify different important aspects of our research. The first concerns the evaluation of the Russian flat tax reform. This reform has had a major influence on fiscal policy discussions throughout the developed and developing world, and yet little systematic research on its impact had been carried out. Our research showed that much of the casual analysis had been misleading. This research is subsequently having a major impact on the policy debate. The second example relates to our analysis of education maintenance allowances in the UK. This policy has been one of the main components of government thinking in the debate on how to encourage children from lower-income backgrounds to stay in education. This financial inducement was found to have a significant impact on staying-on behaviour. Our third example comes from our research on competition policy and firm behaviour, something that has been central to research at IFS for a number of years. Using a unique panel database of British firms, our research has shown the importance of competition policy through the threat of entry by foreign companies in stimulating innovation and productivity enhancement.

Analysing Russia's Flat Tax Reform

At the start of 2001, Russia introduced a radical simplification of its personal income tax, replacing a graduated rate structure with a single flat rate of just 13 per cent. Revenue raised by the personal income tax grew rapidly over the following year, increasing by around 26 per cent in real terms. Many commentators have attributed this revenue boom to the introduction of a low, flat tax rate, pointing to positive effects on both work incentives and tax compliance. Similar 'flat tax' structures have been introduced in Georgia, Romania, Serbia, Slovakia and Ukraine, and are being considered in several other countries.

While this is possibly the most influential income tax reform in the last decade, the claims for its success have not been subjected to rigorous empirical analysis. Joint research by the ESRC Centre at IFS and the Fiscal Affairs department of the International Monetary Fund (IMF) is filling that gap. The Russian reform introduced a sharp reduction in rates of income tax (and social security contributions) for a relatively small group of high earners, with little change in the rates paid by most of the workforce. As such, it is well suited for study using the difference-of-differences approach, which asks whether changes over time for the 'treatment group' of high earners differ significantly from those of a 'control group' comprising other relatively unaffected taxpayers, focusing on periods before and after the reform. This approach was used by Martin Feldstein (*Journal of Political Economy*, 1995) to study the 1986 US tax reform and has been rigorously developed in previous research at the Centre (Blundell, Duncan and Meghir, *Econometrica*, 1998).

Our joint work with the IMF applies this methodology to analyse individual- and household-level panel data available in the Russian Longitudinal Monitoring Survey (RLMS). The findings are striking. There is no evidence that self-reported incomes rose particularly strongly for the group that benefited from a sharp reduction in their marginal income tax rate, implying that tax payments from this affected group are likely to have fallen as a consequence of the lower tax rates they face after the reform. Comparing data on reported income with data on consumption suggests a significant increase in compliance for the group of high earners, which acted to mitigate the fall in tax revenue that would otherwise have occurred. This may

have been a result of the reduction in marginal tax rates, although it may also have reflected improvements in tax administration that accompanied the income tax reform.

The implication of these findings is that the strong growth of revenue from personal income tax in Russia immediately after the flat tax reform was very likely driven by other factors. A leading candidate is the sharp recovery in income from employment that occurred after the crisis in Russia in 1998. It is noteworthy that revenue from other taxes, such as VAT, grew very strongly over the same period, and the flat tax reform was introduced at a time when revenue from the personal income tax was historically low as a share of GDP. Rigorous microeconomic analysis indicates that the boom in tax receipts came predominantly from individuals whose marginal tax rates were largely unaffected, suggesting that other governments that introduce a similar reform to their rate structures in less exceptional circumstances would be prudent not to anticipate a similar boom in income tax revenue.

Evaluation of Education Maintenance Allowances

The ESRC Centre is at the forefront of research in education and human capital in general. It has developed a research programme of broad scope covering issues relating to access and participation in education, and to quality of education, as well as its intergenerational impacts. Within this programme, Centre researchers have been involved in a number of important evaluations and, within this context, have developed suitable methods applied to data designed by us in collaboration with survey specialists. The result has been clear findings that have been used to inform and implement policy. The research programme has covered policy analysis in the UK quite extensively, as well as in Colombia and Mexico.

A key example of a policy where the results have been important both from a basic scientific research point of view and for their influence on policy has been the pilot evaluation of education maintenance allowances. The aim of the policy is to increase the proportion of 16- to 18-year-olds who remain in full-time education and it consists of offering a means-tested payment to those who stay on and whose parental income is below £30,000 a year. The payment is £30 a week for those whose parental income is below £13,000 and is decreased until it reaches a minimum of £5 for those at the maximum income level of £30,000. An IFS team supported by the ESRC Centre was part of a consortium that designed the evaluation and the data collection for three separate cohorts of pupils, followed for up to three years, when the college attendance choice could be observed for the first cohort. Once the evaluation database was designed and the first data collected, we provided regular updates to the government on the progress of the policy, culminating in an evaluation report, as well as a scientific paper that is about to be circulated and includes the key results that are of interest for the broader research community.

Key results are that a grant of this level, which is approximately 20 per cent of the after-tax adult minimum wage, can raise post-compulsory school participation by about 6 percentage points. Interestingly, those who are attracted into education remain for the entire two-year period of the subsidy, possibly implying that they do not find education too onerous. Of those who are attracted into education, half do so from an alternative of complete inactivity. On the one hand this means that the cost of the programme is lower than it would be if earnings were displaced, but on the other hand it may imply that the scheme is attracting those with low opportunity cost and hence low ability. Finding out the returns to additional education for these marginal individuals will, of course, be very important for estimating the actual social return of this policy. Taking a return to education of 8 per cent and assuming a 40-year working career and a discount factor of 5 per cent, the policy would have a positive return for those who would earn £15,000 or more as unskilled workers. For better performance, one

would need to show that the individuals attracted into education actually have a return to education higher than 8 per cent.

Competition, Entry and Innovation

The view that product market competition and entry should promote efficiency and prosperity is now widely held. Major reforms around the world have led to the liberalisation of product markets and trade regimes. Yet despite widespread reforms, growth of value added per capita in EU countries has lagged behind that in the US. This poor performance is not uniform: some industries and regions have experienced rapid growth, while others have stagnated. Gaining a better understanding of why we see this variation in performance is key to effective policy formation.

A possible answer put forward in the literature² is that there are several engines of growth, which may not require the same institutions or policies. Open markets and free entry may be particularly important in advanced knowledge-based industries, where the growth potential of factor accumulation and imitation has been exhausted and frontier innovation has become the main source of growth. Competition may be a necessary input into innovation, both because it encourages new entry and because it keeps incumbent firms on their toes and forces them to innovate in order to survive competition. There are countervailing arguments, which suggest that competition does not always favour innovation. Tough competition may discourage innovation by reducing the expected profits from innovation. If, as an entrepreneur, I anticipate future anti-trust action, or future liberalisation of entry into my market, why should I invest so much in new innovations if the profits from these are to be destroyed by new entrants or potential competitors?

Research at the ESRC Centre at IFS has made both theoretical and empirical advances in understanding the role of competition, entry and trade in encouraging innovation. A particular piece of work by Aghion, Blundell, Griffith, Howitt and Prantl (*Journal of the European Economic Association*, 2004) has looked at the effect of (foreign) entry on innovation and productivity growth in domestic firms, asking to what extent the effect of liberalising entry on innovation varies with the technological distance between domestic incumbents and the world technology frontier.

In order to investigate this question empirically, we use new sources of firm- and plant-level panel data on patents and productivity. The panel nature of the data allows us to control for many unobservable factors that might affect innovation activity but may also be correlated with competition. A major concern in estimating the relationship between entry and innovation is the likelihood that entry is endogenous – for example, entry is more attractive in industries where expectations about future productivity growth are high. In order to deal with this, we use the substantial variation in the impacts of policy reforms, both within and across industries in the UK, that arose due to the EU Single Market Programme, investigations and decisions by the UK competition authorities, privatisation of large publicly owned companies and changes in the level of technology in foreign countries. These provide substantial amounts of independent variation in entry conditions.

Our main findings show, first, that reducing barriers to entry of foreign products and firms has an overall positive effect on innovation and productivity growth. Second, it has a more positive effect on economic performance for firms and industries that are initially closer to the technological frontier. In contrast, performance in firms and industries that are initially far

² See, inter alia, Acemoglu, Aghion and Zilibotti (*Journal of the European Economic Association, Papers and Proceedings*, 2004), which is inspired by the work of Gerschenkron (*Economic Backwardness in Historical Perspective*, 1962).

from the frontier may actually be damaged by liberalisation. As a result, liberalisation magnifies the initial differences in productivity. The reason is that incumbent firms that are sufficiently close to the technological frontier can survive and deter entry by innovating. An increased entry threat thus results in higher innovation intensity aimed at escaping that threat. In contrast, firms and sectors that are far below the frontier are in a weaker position to fight external entry. For these firms, an increase in the entry threat reduces the expected pay-off from innovating, since their expected life horizon has become shorter.

Communication

This section includes three highlights in the communication of our findings. Section 9 contains a review of external relations activities over the year.

We have chosen examples to illustrate our communication with different user groups, although in none of these examples did we engage exclusively with only one audience group, as we aim to make all our outputs as accessible as possible to a wide audience.

Our analysis of the public finances was aimed primarily at a policy audience: civil servants, government ministers, MPs from all parties and the media. People in business and the professions also take an interest in this area of work, particularly in our monthly bulletins. The work presented at the British Association Festival of Science consisted of academic papers, but the audience included civil servants and members of the public. The website is aimed at all our user groups, so development of the new site has concentrated on identifying their requirements and improving navigation to ensure that users can find what they need as quickly as possible. More than any of our other communication tools, the website allows us to speak directly to members of the public.

Public Finances Analysis

Throughout 2004, the state of the public finances was never far from the news; Centre funding played a vital part in allowing IFS researchers to engage in the debate, both through planned research and events and by dealing with journalists and other stakeholders when the need arose.

The IFS Green Budget 2004³ was held in January and provided a look forward to the options facing the Chancellor in the Budget. A press conference was held in the morning, which was attended by 30 journalists. In the afternoon, we presented the findings at greater length to an audience of 90, consisting of civil servants, economists and accountants from the private sector, politicians, representatives of various non-governmental organisations and academics. As well as the usual chapter laying out our public finance forecasts, we also included a chapter about planning the public finances, which discussed the Chancellor's fiscal rules and how public finance forecasts might be improved.

After the Budget, the Spending Review and the Pre-Budget Report, the Institute held briefings for journalists, to outline what the announcements had contained and to explain, amongst other things, the implications for the public finances. Slides from the presentations were made available on the IFS website⁴ for those who had not been able to attend. There was extensive use of IFS work in the print and broadcast media on all these occasions (see Section 9B for information about press coverage statistics).

³ See <http://www.ifs.org.uk/budgets/gb2004/index.php> for *The IFS Green Budget: January 2004* (editors: R. Chote, C. Emmerson and Z. Oldfield).

⁴ See <http://www.ifs.org.uk/budgets/index.php>.

As well as these responses in the form of presentations, IFS used Centre resources to circulate more detailed analysis of the public finances, releasing our publications to coincide with public policy events. Researchers prepared for the Chancellor's Spending Review with a short Briefing Note, 'Challenges for the 2004 Spending Review'.⁵ Many journalists were able to use this in their subsequent coverage of the Chancellor's statement. We also took the opportunity to draw attention to a more technical examination of the government's handling of fiscal policy in a Working Paper, 'Updating the UK's code for fiscal stability'.⁶ The Centre does not only analyse government policy; it also aims to examine opposition proposals: earlier in the year, we published a Briefing Note looking at the Conservatives' spending proposals.⁷ Press releases were issued to summarise each of these publications, and researchers were available to deal with any queries that arose. We also issued further press releases to analyse two announcements of spending proposals by the Conservatives and the Liberal Democrats, dealing with higher education and pensions respectively.⁸

Researchers also updated the Briefing Note 'A survey of public spending in the UK',⁹ published in 2003 to provide an overview of UK public spending. This note will be updated annually to include recent trends and will continue to form part of Fiscal Facts,¹⁰ an area of the IFS website dedicated to facts and figures about the tax and benefit system and public spending.

Separate ESRC funding gave us the resources to send out regular monthly bulletins analysing the state of the public finances.¹¹ We email these to a group of journalists and others who have asked to receive them, and make them immediately available online on the same day as the government publishes its public finance numbers for the previous month. We generally receive several calls from journalists after the release has gone out, and it is widely used to help them understand the figures and to inform their reporting each month.

In the run-up to the election, and specifically in our Election Briefing Notes and Commentary, we will continue to monitor the state of the public finances and inform the public debate about the issue.

British Association Festival of Science

The British Association's Festival of Science, September 2004 was held in Exeter. IFS organised the Economics section, with the theme 'Pension Reform and the Welfare of Pensioners', which Frances Cairncross was invited to chair in her capacity as Chair of the ESRC.

⁵ R. Chote, C. Emmerson, C. Frayne, and S. Love, 'Challenges for the 2004 Spending Review', IFS Briefing Note BN50, July 2004, http://www.ifs.org.uk/publications.php?publication_id=1798.

⁶ C. Emmerson, C. Frayne and S. Love, 'Updating the UK's code for fiscal stability', IFS Working Paper W04/29, November 2004, http://www.ifs.org.uk/publications.php?publication_id=3163.

⁷ R. Chote, C. Emmerson, C. Frayne and S. Love, 'The Conservative Party's medium-term expenditure strategy', IFS Briefing Note BN46, February 2004, http://www.ifs.org.uk/publications.php?publication_id=1794.

⁸ 'Conservatives' plans for higher education funding: who gains and who loses?', 8 September 2004; 'Analysis of the Liberal Democrats' Citizen's Pension', 22 September 2004. See <http://www.ifs.org.uk/press.php?selectyr=2004&view=old> for more details.

⁹ C. Emmerson, C. Frayne and S. Love, 'A survey of public spending in the UK', IFS Briefing Note BN43, September 2004, http://www.ifs.org.uk/publications.php?publication_id=1791.

¹⁰ See the IFS website at <http://www.ifs.org.uk/fiscalfacts.php>.

¹¹ See <http://www.ifs.org.uk/press.php?view=pubfin> for the full list of bulletins.

The presentations took place over two days and covered different aspects of the pensions debate from different perspectives. The focus was on the UK pension system, in particular in two presentations from Centre researchers, Richard Blundell and Carl Emmerson. Richard, who is the current President of the Festival of Science Economics section and was responsible for organising the session, started proceedings with a summary of recent trends in UK retirement and pensions arrangements and a look forward to the future problems and challenges that will face tomorrow's pensioners. Some of this work and the work presented by Carl Emmerson drew on findings from the new English Longitudinal Study of Ageing, a longitudinal panel dataset that IFS has been instrumental in designing and collecting. A second wave is currently being collected and future waves are planned.

Presentations were also given by international contributors, David Wise from Harvard and NBER and Pierre Pestieau from Louvain. David Wise is a partner with IFS and a group of organisations throughout Europe in an international comparative project looking at pension systems across the world and analysing data from each country.

Day 1

Richard Blundell	Institute for Fiscal Studies and University College London	'Retirement and pension arrangements in Britain: recent trends and prospects for the future' (with James Banks, Institute for Fiscal Studies and University College London)
Pierre Pestieau	University of Louvain	'Social security and the well-being of the elderly: three concepts of generosity'
Tim Besley	London School of Economics and Institute for Fiscal Studies	'Credible pension arrangements' (with Andrea Prat, London School of Economics)

Day 2

Martin Weale	National Institute of Economic and Social Research	'Distributional aspects of pension reform: the consequences of means testing?' (with James Sefton, Imperial College London & NIESR and Justin van de Ven, NIESR)
Carl Emmerson	Institute for Fiscal Studies	'UK pensions policy - where now?' (with Richard Disney, Institute for Fiscal Studies and University of Nottingham)
David Wise	University of Harvard and National Bureau of Economic Research	'Facing the age wave and economic policy: fixing the public pension system with healthcare in the wings'

A diverse audience attended the session. As part of the Festival of Science, we were able to attract people who might not ordinarily take an active interest in economics; in particular, several members of the public – some pensioners themselves, others younger people – came to the sessions. All of those who came on the first day were also present on the second, which is testament to the engaging presentations and the ensuing lively debate, involving speakers and members of the audience, experts and those speaking from personal experience, which took place on both days. A number of civil servants from the Treasury and the Department for Work and Pensions, academics, both from Exeter and elsewhere, and representatives from the pensions industry were also present.

A number of journalists attended the Festival, and we held a press conference after our session on the second day. This briefing was attended by science correspondents from all the major broadsheets and by local and national BBC radio and Channel 4.

Some of the papers from this event have since been published in a special issue of the IFS journal, *Fiscal Studies*.¹²

New Website Launch

Work has been under way to redevelop the website for the last two years. A contribution from the ESRC towards communications helped us to complete the redesign, and the new site was launched in November 2004.

The site is now generated dynamically on the server side from a UNIX database, which contains details of outputs, staff and visitors, events, projects and funding bodies. This replaces a collection of static pages, which was becoming too large to keep up-to-date easily. For instance, once new event details are added to the database, a link will be automatically added to the upcoming events section on the home page. This system also allows for more structured searches, as a search function can be built that looks only in particular fields or combines several search terms across fields. For example, the user could specify an author of a publication and a word from the title, and the engine would search those particular fields to find relevant records.

The new site has also been designed to be fully compliant with W3C accessibility guidelines,¹³ and we hope that this will make our research more accessible to a wider range of stakeholders. Further work will be carried out to make improvements in this area, should any problems with accessibility come to light through feedback from users.

Figure 3 shows the new home page, which has the same layout as all other pages. It consists of a title bar along the top and a navigation bar down the left-hand side. The central section contains the main content, and the right-hand box is used for links to related areas of interest. Research centres within IFS are represented by pages that use the same design but different colour schemes.

Figure 4 shows one of the ESRC Centre's pages. The section of the site devoted to the Centre is now better integrated into the rest of the site, providing links to all the research at IFS that falls within the Centre's remit. This reflects the emphasis in our proposal for research over the next five years of the Centre's life on the fact that much IFS work, even if co-funded, is

¹² *Fiscal Studies*, vol. 26, no. 1, March 2005.

¹³ See <http://www.w3c.org/TR/WCAG10/> for full details of the guidelines used.

Figure 3. New IFS home page

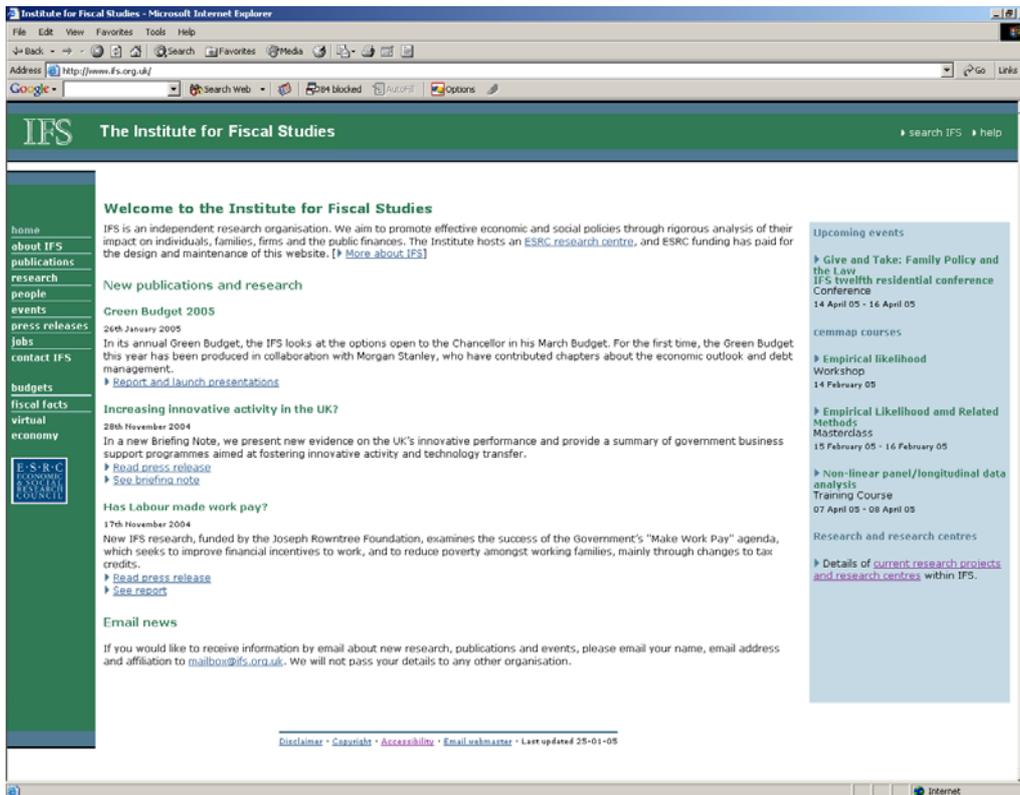
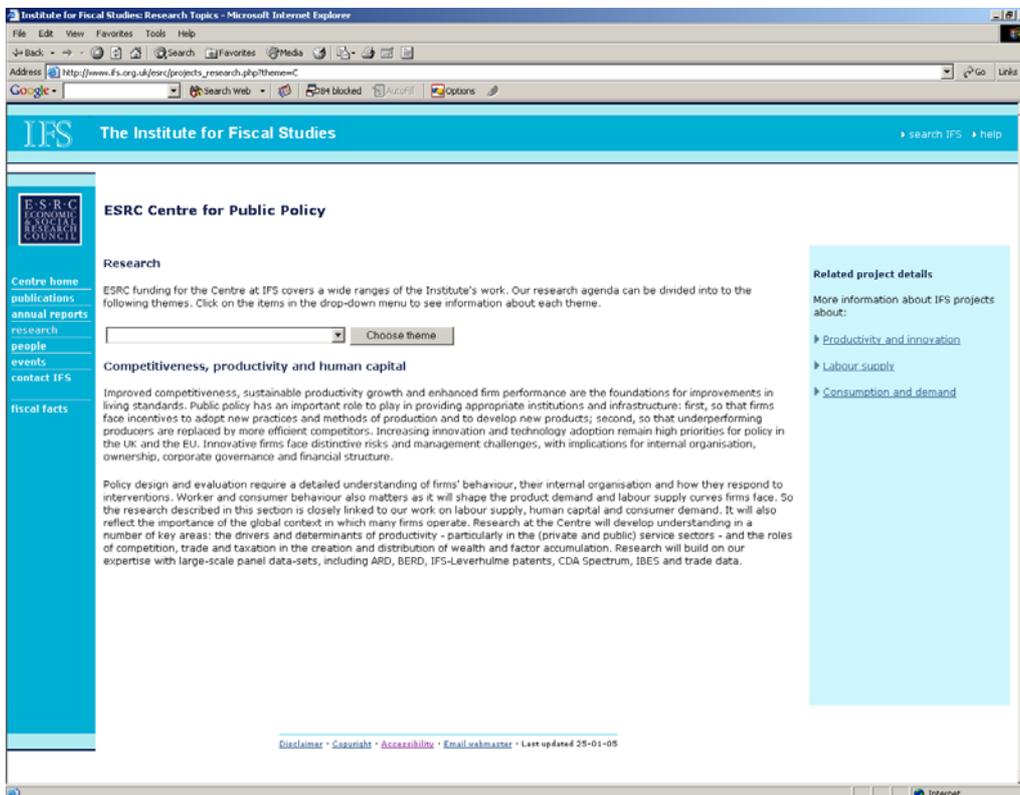


Figure 4. ESRC Centre research page



underpinned by Centre funding. The Centre pages have been redesigned using colours recommended in the ESRC's 'Communications Toolkit'.¹⁴

The database has been built to be compatible with Regard to allow us to give them electronic details of outputs in the correct data format along with our Annual Reports to the ESRC.

A new area is under development, bringing together resources on the site for school children and undergraduates. This includes links to the IFS monthly contributions to the *Economic Review*, a magazine aimed primarily at A-level students studying or interested in economics, and links to slides from the public economics lectures given each year to first-year undergraduates at Oxford and Cambridge by members of IFS staff. It also groups together our Fiscal Facts area about taxes, benefits and public spending, showing figures going back to the 1970s for many taxes and benefits and including outlines of trends over time.

The Budget area of the site has been redesigned to group together all our analyses of Budgets and related events over the last couple of years, as well as links to Green Budgets.

An addition to the site is the inclusion of details of all ongoing projects. Projects are listed as soon as funding has been confirmed, with links to funding bodies and to staff who are working on them. Once publications are available, they are linked to the relevant project area. Projects remain on the site for some time after they have been completed in case users are still searching for information about them, but they will eventually be removed, as publications or other outputs will generally be available online after completion.

¹⁴ The colours are taken from <http://www.esrc.ac.uk/id/Colour.pdf> to complement the ESRC logo, which is used throughout the Centre's website.

Appendix 2. STAFF

Name	Grade (December 2004)	Time spent on Centre work (%)	Comments
Laura Abramovsky	RE5	30	
Stuart Adam	RE9	50	
Orazio Attanasio	Prof	28	
James Banks	DD	20	
Chiara Binelli	PhD	100	
Laura Blow	SRE9	30	Maternity leave April – September
Richard Blundell	RD	68	
Stephen Bond	PD	28	
Renata Bottazzi	PhD	100	
Mike Brewer	SRE8	28	
Maria Casanova	PhD	100	
Robert Chote	D	28	
Ian Crawford	PD	19	
Lorraine Dearden	PD	28	
Carl Emmerson	SRE11	20	
Emla Fitzsimons	RE8	50	
Alissa Goodman	SRE9	28	
Rachel Griffith	PD	28	
Alexander Klemm	SRE4	20	
Andrew Leicester	RE9	50	
Olivier Marie	PhD	75	
Costas Meghir	DRD	50	
Matthias Parey	PhD	100	
Howard Reed	SRE10	35	Until April
Andrew Shephard	RE8	50	
Barbara Sianesi	SRE6a	28	
Helen Simpson	SRE7a	28	
Frank Windmeijer	PC	28	
Chantal Crevel-Robinson	SS	36	
Emma Hyman	SRE5a	25	Since October
Jenny Williams	Sec	20	
Orazio Attanasio	RF	50	
Alan Duncan	RF	50	
Ian Preston	RF	50	
Stephen Redding	RF	50	
Ian Walker	RF	50	
Christian Dustmann	RA	50	
Stephen Machin	RA	50	
Gianluca Violante	RA	50	

Appendix 3. TRAINING

PhD, Economics, University College London	Ongoing	Laura Abramovsky Chiara Binelli Laura Blow Renata Bottazzi Maria Casanova Christine Frayne Giovanni Gallipoli Heike Harmgart Rupert Harrison Alexander Klemm Gareth Macartney Elena Martinez Sanchis Matthias Parey Matthew Wakefield
MSc, Economics, Birkbeck College London	Completed	Stuart Adam Andrew Leicester
IFS media training with Liam Halligan	Advanced	Laura Abramovsky Stuart Adam Robert Chote Carl Emmerson Christine Frayne Alissa Goodman Matthew Wakefield
	Beginners	Emla Fitzsimons Rupert Harrison Andrew Leicester Alice Mesnard Jonathan Shaw Barbara Sianesi Marcos Vera-Hernandez

Appendix 4. PERFORMANCE INDICATORS

A. Publications

1. Books

- Aghion, P. and Griffith, R. (2005), *Competition and Growth*, MIT Press, forthcoming.
- Armstrong, M., co-editor, *Handbook of Industrial Organization*, Volume III, North-Holland, forthcoming.
- Attanasio, O., Meghir, C., Vera-Hernandez, M. et al. (2004), *Baseline Report on the Evaluation of Familias en Acción*, IFS report.
- Blow, L., Leicester, A. and Oldfield, Z. (2004), *Consumption Trends in the UK, 1975–99*, IFS Report R65.
- Blundell, R., Card, D. and Freeman, R. (eds) (2004), *Seeking a Premier Economy: The Economic Effects of British Economic Reforms, 1980–2000*, NBER-CLM (National Bureau of Economic Research, Comparative Labor Markets Series), University of Chicago Press.
- Brewer, M., Goodman, A., Myck, M., Shaw, J. and Shephard, A. (2004), *Poverty and Inequality in Britain: 2004*, IFS Commentary C96.
- Chote, R., Emmerson, C. and Oldfield, Z. (eds) (2004), *The IFS Green Budget: January 2004*, IFS Commentary C95.
- Goodman, A. and Oldfield, Z. (2004), *Permanent Differences? Income and Expenditure Inequality in the 1990s and 2000s*, IFS Report R66.

2. Book Chapters

- Attanasio, O., Low, H. and Sanchez-Marcos, V. (2004), 'Female labour supply as insurance against idiosyncratic risk', *Journal of the European Economic Association: Papers and Proceedings of the European Economic Association Meeting, Madrid, August 2004*, forthcoming.
- Banks, J. (2004), 'Comment on "Mortality, income and income inequality over time in Britain and the United States" by Angus Deaton and Christina Paxson', in D. Wise (ed.), *Perspectives on the Economics of Ageing*, University of Chicago Press.
- Banks, J., Blundell, R. and Smith, J. P. (2004), 'Wealth portfolios in the United Kingdom and the United States', in D. Wise (ed.), *Perspectives on the Economics of Ageing*, University of Chicago Press.
- Banks, J., Emmerson, C. and Oldfield, Z. (2004), 'Not so brief lives: longevity expectations and well-being in retirement', in *Seven Ages of Man and Woman: A Look at Life in Britain in the Second Elizabethan Era*, Economic and Social Research Council, June.
- Blanden, J., Goodman, A., Gregg, P. and Machin, S. (2004), 'Changes in intergenerational mobility in Britain', in M. Corak (ed.), *Generational Income Mobility in North America and Europe*, Cambridge University Press.
- Blundell, R. (2004), 'Pension incentives and early retirement', in E. Overbye and P. Kemp (eds), *Pensions: Challenges and Reforms*, International Studies on Social Security, Ashgate.
- Blundell, R., Dearden, L. and Sianesi, B. (2004), 'Measuring the returns to education', in S. Machin and A. Vignoles (eds), *The Economics of Education in the UK*, Princeton University Press, forthcoming.
- Blundell, R. and Hoynes H. (2004), 'Has "in-work" benefit reform helped the labor market?', in R. Blundell, D. Card and R. Freeman (eds), *Seeking a Premier League Economy: The Economic Effects of British Economic Reforms, 1980–2000*, University of Chicago Press.

- Blundell, R., Meghir, C. and Smith, S. (2004), 'Pension incentives and the pattern of retirement in the UK', in J. Gruber and D. Wise (eds), *Social Security and Retirement around the World: Micro-Estimation*, University of Chicago Press.
- Devereux, M. (2004), 'Measuring taxes on income from capital', in P. B. Sorensen (ed.), *Measuring the Tax Burden on Capital and Labour*, MIT Press.
- Devereux, M. and Klemm, A. (2004), 'Measuring taxes on income from capital: evidence from the UK', in P. B. Sorensen (ed.), *Measuring the Tax Burden on Capital and Labour*, MIT Press.
- Disney, R., Emmerson, C. and Smith, S. (2004), 'Pension reform and economic performance in Britain in the 1980s and 1990s', in D. Card, R. Blundell, and R. Freeman (eds), *Seeking a Premier Economy: The Economic Effects of British Economic Reforms, 1980–2000*, University of Chicago Press.
- Disney, R. and Hawkes, D. (2004), 'Why has employment recently risen among older workers in Britain?', in R. Dickens, P. Gregg and J. Wadsworth (eds), *The Labour Market under New Labour*, Palgrave Macmillan.
- Emmerson, C., Meghir, C. and McNally, S. (2005), 'Economic evaluation of education initiatives', in S. Machin and A. Vignoles (eds), *The Economics of Education in the UK*, Princeton University Press, forthcoming.
- Griffith, R. and Geroski, P. (2004), 'Identifying anti-trust markets', in M. Neumann and J. Weigand (eds), *International Handbook of Competition*, Edward Elgar.
- Lafontaine, F. and Slade, M. (2005), 'Empirical assessment of exclusive contracts', in P. Buccirossi (ed.), *Handbook of Antitrust Economics*, MIT Press, forthcoming.
- Midelfart, K., Overman, H., Redding, S. and Venables, A. (2004), 'The location of European industry', in A. Dierx, F. Ilzkovitz and K. Sekkat (eds), *European Integration and the Functioning of Product Markets*, Edward Elgar.
- Sianesi, B., Blundell, R. and Dearden, L. (2005), 'Measuring the returns to education', in S. Machin and A. Vignoles (eds), *The Economics of Education in the UK*, Princeton University Press, forthcoming.
- Simpson, H. and Griffith, R. (2004), 'Characteristics of foreign-owned firms in British manufacturing', in R. Blundell, D. Card and R. Freeman (eds), *Seeking a Premier Economy: The Economic Effects of British Economic Reforms, 1980–2000*, University of Chicago Press.

3. Refereed Journal Articles

- Aghion, P., Bloom, N., Blundell, R., Griffith, R. and Howitt, P. (2005), 'Competition and innovation: an inverted U relationship', *Quarterly Journal of Economics*, forthcoming, May.
- Aghion, P., Blundell, R., Griffith, R., Howitt, P. and Prantl, S. (2004), 'Entry and productivity growth: evidence from micro-level panel data', *Journal of the European Economic Association*, vol. 2, pp. 265–76.
- Aghion, P., Bond, S., Klemm, A. and Marinescu, I. (2004), 'Technology and financial structure: are innovative firms different?', *Journal of the European Economic Association*, vol. 2, pp. 277–88.
- Armstrong, M. (2004), 'Network interconnection with asymmetric networks and heterogeneous calling patterns', *Information Economics and Policy*, vol. 16, pp. 375–90.
- Armstrong, M. and Sappington, D. (2004), 'Toward a synthesis of models of regulatory policy design with limited information', *Journal of Regulatory Economics*, vol. 26, pp. 1–21.
- Attanasio, O., Goldberg, P. K. and Pavcnik, N. (2004), 'Trade reforms and wage inequality in Colombia', *Journal of Development Economics*, vol. 74, pp. 331–66.

- Attanasio, O., Gomez, L. C., Gomez, A. and Vera-Hernandez, M. (2004), 'Child health in rural Colombia: determinants and policy interventions', *Economics and Human Biology*, vol. 2, pp. 411–38.
- Attanasio, O. and Low, H. (2004), 'Estimating Euler equations', *Review of Economic Dynamics*, vol. 7, pp. 406–35.
- Attanasio, O. and Székely, M. (2004), 'Wage shocks and consumption variability in Mexico during the 1990s', *Journal of Development Economics*, vol. 73, pp. 1–25.
- Banks, J. and Blundell, R. (2004), 'Private pension arrangements and retirement in Britain', *Fiscal Studies*, forthcoming, March.
- Banks, J., Blundell, R. and Emmerson, C. (2004), 'The balance between DB, DC and state provision', *Journal of the European Economic Association*, forthcoming.
- Bingley, P., Walker, I. and Zhu, Y. (2005), 'Wages, work and welfare', *German Economic Review*, forthcoming.
- Blundell, R. (2004), 'Labour market policy and welfare reform: meeting distribution and efficiency objectives', *De Economist*, vol. 152, pp. 233–50.
- Blundell, R. (2004), 'How revealing is revealed preference?', EEA Presidential Lecture, *Journal of the European Economic Association*, forthcoming.
- Blundell, R., Costa Dias, M., Meghir, C. and Van Reenen, J. (2004), 'Evaluating the employment impact of a mandatory job search program', *Journal of the European Economic Association*, vol. 2, pp. 569–606.
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- Blundell, R. and Powell, J. L. (2004), 'Endogeneity in semiparametric binary response models', *Review of Economic Studies*, vol. 71, pp. 655–79.
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- Bond, S., Harhoff, D. and Van Reenen, J. (2005), 'Investment, R&D and financial constraints in Britain and Germany', *Annales d'Economie and de Statistique*, forthcoming.
- Bond, S. and Windmeijer, F. (2005), 'Reliable inference for GMM estimators? Finite sample properties of alternative test procedures in linear panel data models', *Econometric Reviews*, forthcoming.
- Bridges, S. and Disney, R. (2004), 'Use of credit and arrears on debt among low-income families in the United Kingdom', *Fiscal Studies*, vol. 25, pp. 1–25.
- Chevalier, A., Harmon, C., Walker, I. and Zhu, Y. (2004), 'Does education raise productivity, or just reflect it?', *Economic Journal*, vol. 114, pp. F499–517.
- Clark, T. and Leicester, A. (2004), 'Inequality and two decades of British tax and benefit reform', *Fiscal Studies*, vol. 25, pp. 129–58.
- Crawford, I. and Image, I. (2004), 'The retail price index and the cost-of-living index: testing for consistency in theory and practice', *Fiscal Studies*, vol. 25, pp. 79–91.
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- Devereux, M., Griffith, R. and Klemm, A. (2004), 'Why has the UK corporation tax raised so much revenue?', *Fiscal Studies*, vol. 25, pp. 367–88.
- Devereux, M., Griffith, R. and Simpson, H. (2004), 'The geographic distribution of production activity in the UK', *Regional Science and Urban Economics*, vol. 34, pp. 533–64.

- Disney, R. (2004), 'Are contributions to public pension programmes a tax on employment?', *Economic Policy*, vol. 39, pp. 269–311.
- Disney, R. (2004), 'Public pension reform in Europe', *World Economy*, vol. 26, pp. 1425–46.
- Disney, R. and Emmerson, C. (2004), 'Public pension reform in the United Kingdom: what effect on the financial well-being of current and future pensioners?', *Fiscal Studies*, forthcoming, March.
- Ekeland, I., Heckman, J. and Nesheim, L. (2004), 'Identification and estimation of hedonic models', *Journal of Political Economy*, vol. 112, pp. S60–109.
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- Griffith, R. and Klemm, A. (2004), 'What has been the tax competition experience of the last 20 years?', *Tax Notes International*, vol. 34, pp. 1299–316.
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- Low, H. and Maldoom, D. (2004), 'Optimal taxation, prudence and risk sharing', *Journal of Public Economics*, vol. 88, pp. 443–64.
- Machin, S., McNally, S. and Meghir, C. (2004), 'Improving pupil performance in English secondary schools: Excellence in Cities', *Journal of the European Economic Association*, vol. 2, pp. 569–606.
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- Myck, M., Dearden, L., McIntosh, S. and Vignoles, A. (2004), 'The returns to academic and vocational qualifications in Britain', *Bulletin of Economic Research*, vol. 54, pp. 249–73.
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- Redding, S. and Venables, A. (2004), 'Economic geography and international inequality', *Journal of International Economics*, vol. 62, pp. 53–82.
- Sianesi, B. (2004), 'An evaluation of the Swedish system of active labour market programmes in the 1990s', *Review of Economics and Statistics*, vol. 86, pp. 133–55.
- Slade, M. (2004), 'Market power and joint dominance in UK brewing', *Journal of Industrial Economics*, vol. 52, pp. 133–63.
- Slade, M. (2004), 'Models of firm profitability', *International Journal of Industrial Organization*, vol. 22, pp. 289–308; Presidential Address to the European Association for Research in Industrial Economics (EARIE), Helsinki, 2003.
- Slade, M. (2005), 'The role of economic space in decision making', *Annales d'Economie et de Statistique*, forthcoming; ADRES Lecture, Paris, January 2004.
- Slade, M. and Thille, H. (2005), 'Commodity spot prices: an exploratory assessment of market structure and forward trading effects', *Economica*, forthcoming.
- Trostel, P. and Walker, I. (2004), 'Sheepskin effects in working behaviour', *Applied Economics*, vol. 36, pp. 1959–66.
- Windmeijer, F. (2004), 'A finite sample correction for the variance of linear efficient two-step GMM estimators', *Journal of Econometrics*, forthcoming, January.

4. Non-Refereed Journal Articles

- Abramovsky, L. (2005), 'Is the UK doing enough innovative activity? International comparative evidence', *Economic Review*, forthcoming.
- Fitzsimons, E. (2004), 'Higher education funding', *Economic Review*, vol. 22, no. 1.
- Harrison, R. (2004), 'R & D tax credits', *Economic Review*, vol. 21, no. 4.
- Love, S. (2004), 'Fiscal policy: principles and practice', *Economic Review*, vol. 22, no. 2.

5. Other Publications

- Abramovsky, L., Battistin, E., Goodman, A. and Simpson, H. (2004), 'The impact of ETP on the take-up of training among employers: year 1 report', Department for Education and Skills, March.
- Abramovsky, L., Griffith, R. and Sako, M. (2004), 'Offshoring of business services and its impact on the UK economy', IFS/AIM Briefing Note BN51, November.
- Abramovsky, L., Harrison, R. and Simpson, H. (2004), 'Increasing innovative activity in the UK? Where now for government support for innovation and technology transfer?', IFS Briefing Note BN53, November.
- Acemoglu, D., Aghion, P., Griffith, R. and Zilibotti, F. (2004), 'Vertical integration and technology: theory and evidence', IFS Working Paper W04/34, December.
- Adam, S. (2004), 'A survey of the UK tax system', IFS Briefing Note BN9, updated November.
- Attanasio, O., Banks, J., Blundell, R., Chote, R. and Emmerson, C. (2004), 'Pensions, pensioners and pensions policy: financial security in UK retirement savings?', IFS Briefing Note BN48, March.
- Attanasio, O., Banks, J. and Wakefield, M. (2004), 'Effectiveness of tax incentives to boost (retirement) saving: theoretical motivation and empirical evidence', IFS Working Paper W04/33, December.
- Attanasio, O., Battistin, E. and Ichimura, H. (2005), 'What really happened to consumption inequality in the US?', NBER Working Paper 10338, forthcoming.
- Attanasio, O., Gomez, L. C., Gomez, A. and Vera-Hernandez, M. (2004), 'Child health in rural Colombia: determinants and policy interventions', EDePo Working Paper EWP04/02, May.
- Attanasio, O., Low, H. and Sanchez-Marcos, V. (2004), 'Explaining changes in female labour supply in a life-cycle model', University of Cambridge, Working Paper 04/51, October.
- Attanasio, O., Meghir, C. and Santiago, A. (2004), 'Education choices in Mexico: using a structural model and a randomized experiment to evaluate PROGRESA', EDePo Working Paper EWP04/04, June.
- Attanasio, O., Syed, M. and Vera-Hernandez, M. (2004), 'Early evaluation of a new nutrition and education programme in Colombia', IFS Briefing Note BN44, January.
- Attanasio, O. and Vera-Hernandez, M. (2004), 'Medium- and long run effects of nutrition and child-care: evaluation of a community nursery programme in rural Colombia', EDePo Working Paper EWP04/06, November.
- Banks, J., Blundell, R., Smith, J. and Oldfield, Z. (2004), 'House price volatility and housing ownership over the life-cycle', UCL Discussion Paper 04/09.
- Berlinski, S. and Galiani, S. (2004), 'The effect of a large expansion of pre-primary school facilities on preschool attendance and maternal employment', IFS Working Paper W04/30, November.
- Bernard, A., Redding, S. and Schott, P. (2004), 'Comparative advantage and heterogeneous firms', IFS Working Paper W04/24, July.
- Blow, L. (2004), 'Valuing a new good', IFS Working Paper W04/03, January.
- Blow, L., Browning, M. and Crawford, I. (2004), 'Nonparametric methods for the characteristics model', CEMMAP Working Paper CWP18/04, December.

- Blundell, R., Brewer, M. and Shephard, A. (2004), 'The impact of tax and benefit changes between April 2000 and April 2003 on parents' labour supply', IFS Briefing Note BN52, November.
- Blundell, R., Gosling, A., Ichimura, H. and Meghir, C. (2004), 'Changes in the distribution of male and female wages accounting for employment composition using bounds', IFS Working Paper W04/25, September.
- Blundell, R., Low, H. and Preston, I. (2004), 'Income risk and consumption inequality: a simulation study', IFS Working Paper W04/26, October.
- Blundell, R., Pistaferri, L. and Preston, I. (2004), 'Consumption inequality and partial insurance', IFS Working Paper W04/28, November.
- Blundell, R., Pistaferri, L. and Preston, I. (2004), 'Imputing consumption in the PSID using food demand estimates from the CEX', IFS Working Paper W04/27, October.
- Bohnet, I., Harmgart, H., Huck, S. and Tynan, J-R. (2004), 'Learning trust', ELSE Working Paper, October.
- Bond, S., Hawkins, M. and Klemm, A. (2004), 'Stamp duty on shares and its effect on share prices', IFS Working Paper W04/11, June.
- Bond, S., Klemm, A., Newton-Smith, R., Syed, M. and Vlieghe, G. (2004), 'The roles of expected profitability, Tobin's Q and cash flow in econometric models of company investment', IFS Working Paper W04/12, June.
- Bond, S., Leblebicioglu, A. and Schiantarelli, F. (2004), 'Capital accumulation and growth: a new look at the empirical evidence', Nuffield College Economics Working Paper 2004-W8.
- Bottazzi, R. (2004), 'Labour market participation and mortgage related borrowing constraints', IFS Working Paper W04/09, January.
- Brewer, M. (2004), 'Child poverty and tax credit changes: a note for the Work and Pensions Select Committee', mimeo, February.
- Brewer, M. (2004), 'Will the government hit its child poverty target in 2004-05?', IFS Briefing Note BN47, March.
- Chote, R., Emmerson, C., Frayne, C. and Love, S. (2004), 'Challenges for the 2004 Spending Review', IFS Briefing Note BN50, July.
- Chote, R., Emmerson, C., Frayne, C. and Love, S. (2004), 'The Conservative Party's medium-term expenditure strategy', IFS Briefing Note BN46, February.
- Crawford, C. and Shaw, J. (2004), 'A survey of the UK benefit system', IFS Briefing Note BN13, updated November.
- Crawford, I. (2004), 'Necessary and sufficient conditions for latent separability', IFS Working Paper W04/17, June.
- Crossley, T. and Low, H. (2004), 'When might unemployment insurance matter? Credit constraints and the cost of saving', McMaster University Working Paper 04/04, July.
- Dearden, L., Fitzsimons, E. and Goodman, A. (2004), 'An analysis of the higher education reforms', IFS Briefing Note BN45, January.
- Dearden, L., McGranahan, L. and Sianesi, B. (2004), 'An in-depth analysis of the returns to National Vocational Qualifications obtained at Level 2', Centre for the Economics of Education, Discussion Paper 46, December.
- Dearden, L., McGranahan, L. and Sianesi, B. (2004), 'Returns to education for the 'marginal learner': evidence from the BCS70', Centre for the Economics of Education, Discussion Paper 45, December.
- Dearden, L., McGranahan, L. and Sianesi, B. (2004), 'The role of credit constraints in educational choices: evidence from the NCDS and BCS70', Centre for the Economics of Education, Discussion Paper 48, December.
- Devereux, M., Griffith, R. and Klemm, A. (2004), 'How has the UK corporation tax raised so much revenue?', IFS Working Paper W04/04, February.
- Devereux, M., Griffith, R. and Simpson, H. (2004), 'Agglomeration, regional grants and firm location', IFS Working Paper W04/06, March.

- Emmerson, C., Frayne, C. and Love S. (2004), 'A survey of public spending in the UK', IFS Briefing Note BN43, updated September.
- Emmerson, C., Frayne, C. and Love, S. (2004), 'Updating the UK's code for fiscal stability', IFS Working Paper W04/29, November.
- Emmerson, C., Reed, H. and Shephard, A. (2004), 'An assessment of PenSim2', IFS Working Paper W04/21, December.
- Fitzsimons, E. (2004), 'The effects of risk on education in Indonesia', EDePo Working Paper EWP04/01, April.
- Frayne, C. and Goodman, A. (2004), 'The impact of introducing a national minimum wage for 16 and 17 year olds on employment and education outcomes', Low Pay Commission, January.
- Goodman, A., Kaplan, G. and Walker, I. (2004), 'Understanding the effects of early motherhood in Britain: the effects on mothers', IFS Working Paper W04/20, August.
- Griffith, R., Harrison, R. and Van Reenen, J. (2004), 'How special is the special relationship? Using the impact of US R&D spillovers on UK firms as a test of technology sourcing', IFS Working Paper W04/32, December.
- Griffith, R. and Klemm, A. (2004), 'What has been the tax competition experience of the past 20 years?', IFS Working Paper W04/05, February.
- Griffith, R., Redding, S. and Simpson, H. (2004), 'Foreign ownership and productivity: new evidence from the service sector and the R&D lab', IFS Working Paper W04/22, August.
- Harmgart, H. and Jurajda, S. (2004), 'When do "female" occupations pay more?', CEPR Discussion Paper DP4270, February.
- Leicester, A. and Windmeijer, F. (2004), 'The "fat tax": economic incentives to reduce obesity', IFS Briefing Note BN49, June.
- Lydon, R. and Walker, I. (2004), 'Welfare-to-work, wages and wage growth', IZA Discussion Paper 1144, May.
- Meghir, C. (2004), 'A retrospective on Friedman's theory of permanent income', IFS Working Paper W04/01, January.
- Meghir, C. and Palme, M. (2004), 'Educational reform, ability and family background', IFS Working Paper W04/10, May.
- Myck, M. and Paull, G. (2004), 'The role of employment experience in explaining the gender wage gap', IFS Working Paper W04/16, July.
- Smith, S. (2004), 'Can the retirement consumption puzzle be solved?', IFS Working Paper W04/07, March.
- Vandenbussche, J., Aghion, P. and Meghir, C. (2004), 'Growth, distance to frontier and composition of human capital', IFS Working Paper W04/31, August.
- Wakefield, M. (2004), 'Book review, "Forced Saving: Mandating Private Retirement Incomes", H. Bateman, G. Kingston and J. Piggott', *Economica*, vol. 71, pp. 512–13.
- Walker, I. and Zhu, Y. (2004), 'Child support liability and partnership dissolution', IFS Working Paper W04/18, July.
- Windmeijer, F., Hugh, G. and Pierre, H. (2004), 'Waiting lists, waiting times and admissions: an empirical analysis at hospital and general practice level', IFS Working Paper W04/35, December.

6. Software and Data

- Leuven, E. and Sianesi, B. (2004), 'film', Stata module to perform 'fully interacted linear matching', i.e. a fully interacted linear regression model in which the treatment dummy is interacted with each one of the other regressors, May

B. External Relations

1. Membership of Committees, Editorships and Honours

Committees

- Adam, S., Member, BCC Tax Simplification Working Group, British Chambers of Commerce
- Attanasio, O., Member, Program Committee, European Economic Association meeting, Madrid, August 2004
- Banks, J., Member, Research Committee, International Network of Pension Supervisors and Regulators
- Banks, J., Member, Advisory Group, ESRC UK Longitudinal Studies Centre (ULSC)
- Banks, J., Member, Advisory Group, Office for National Statistics Wealth and Assets Survey
- Banks, J., Member, Technical Group, Office for National Statistics Wealth and Assets Survey
- Banks, J., Member, Advisory Group, UK Government's Pension Statistics Task Force
- Banks, J., Advisor, Health, Alcohol and Psychosocial Factors in Eastern Europe
- Blundell, R., Member, Executive Committee and Council, Econometric Society
- Blundell, R., Chair, Yrjö Jahnsson Prize Committee
- Blundell, R., Member, Econometric Society Nominating Committee
- Blundell, R., Chair, COST A23, EU Research Network in Labor Market Analysis
- Blundell, R., Member, Review Committee for Tilburg University, Graduate School
- Blundell, R., Member, Review Committee for Universitat Pompeu Fabra, Graduate School
- Bond, S., Member, CIOT Corporate Tax Sub-Committee, Chartered Institute of Taxation
- Bond, S., Programme Committee, Econometric Society European Meeting (ESEM), 2004
- Brewer, M., Member, Joseph Rowntree Foundation's Housing Benefit Reform group
- Disney, R., Member, RES Council 2001–06
- Disney, R., Member, Review Body for Nurses and Other Health Professionals (NOHPRB), 2003–06
- Disney, R., Member, Scientific Committee, CeRP, Turin, Italy
- Disney, R., Scientific Adviser, RTN programme on Economics of Ageing
- Emmerson, C., Member, Later Life Advisory Group, Joseph Rowntree Foundation
- Griffith, R., Academic Panellist, Competition Commission, 2004–
- Haskel, J., Member, Competition Commission
- Klemm, A., Member, CIOT Corporate Tax Sub-Committee, Chartered Institute of Taxation
- Klemm, A., Member, CEPS Task Force on Tax Harmonization, Centre for European Policy Studies, Brussels
- Low, H., Co-Organiser, Public Economics Working Group
- Low, H., Program Committee, European Economic Association Annual Congress 2004
- Walker, I., Research Fellow, Institute for the Study of Labour (IZA)
- Walker, I., Council Member, Royal Economic Society
- Walker, I., Secretary, European Economic Association

Editorships

- Armstrong, M., Chairman, Editorial Board, *Review of Economic Studies*
- Attanasio, O., Associate Editor, *Journal of the European Economic Association*
- Banks, J., Associate Editor, *Research in Economics*
- Blundell, R., Co-Editor, TAPES Issue, *Journal of Public Economics*
- Blundell, R., Editorial Board, *Journal of Economic Literature*
- Blundell, R., Editorial Board, *Fiscal Studies*
- Bond, S., Editorial Board, *Fiscal Studies*
- Brugiavini, A., Editorial Board, *Fiscal Studies*
- Devereux, M., Policy Watch Editor, *International Tax and Public Finance*
- Disney, R., Editorial Board, *Fiscal Studies*
- Griffith, R., Board Member, *Review of Economic Studies*, 2002–

Griffith, R., Editor, *Economic Journal Conference Volume*, 2004–06
Haskel, J., Editorial Board, *Economica*
Meghir, C., Co-Editor, *Econometrica*
Miles, D., Editor, *Fiscal Studies*
Myles, G., Editor, *Fiscal Studies*
Scharf, K., Editorial Board, *Fiscal Studies*
Simpson, H., Editor, *Fiscal Studies*
Slade, M., Associate Editor, *International Journal of Industrial Organization*
Slade, M., Editorial Board, *Resources Policy*
Slade, M., International Board of Editors, *The Energy Journal*
Slade, M., Editorial Board, *Managerial and Decision Economics*
Walker, I., Editorial Board, *Fiscal Studies*
Weber, G., Editorial Board, *Fiscal Studies*

Honours

Attanasio, O., Elected Fellow, British Academy (July 2004)
Attanasio, O., Elected Fellow, European Development Network (EUDN) (April 2004)
Blundell, R., Honorary Member, American Economic Association
Blundell, R., Fellow, American Academy of Arts and Science
Blundell, R., Honorary Fellow, Institute of Actuaries
Blundell, R. President, European Economics Association
Griffith, R., Research Affiliate, Centre for Economic Policy Research (CEPR)

2. Membership of Networks

Bottazzi, R., Research Training Network: Economics of Ageing in Europe (AGE), RTN
European Program HPRN-CT-2002-00235
Blundell, R., COST A23, EU Research Network in Microeconometrics and Labor Market
Analysis
Redding, S., Research Training Network: The Economic Geography of Europe –
Measurement, Testing and Policy Simulations
Redding, S., Research Training Network: Trade, Industry and Development
Sianesi, B., Intervention Study team, European Social Fund (ESF) programme in Quantitative
Methods in Social Sciences (QMSS)

3. Overseas Visitors (more than two days)

19.04.04 – 23.04.04	Gordon Anderson, Professor of Economics, University of Toronto
04.05.04 – 06.05.04	Jason Cummins, Senior Economist, Federal Reserve Board
04.05.04 – 07.05.04	Peter Gottschalk, Professor of Economics, Boston College
20.05.04 – 23.05.04	Torsten Persson, Professor of Economics and Director, Institute for International Economic Studies, Stockholm
20.05.04 – 23.05.04	Guido Tabellini, Professor of Economics and Director, IGIER, University of Bocconi
26.05.04 – 30.05.04	Robert Moffitt, Professor of Economics, Johns Hopkins University
01.08.04 – 14.08.04	Susanne Prantl, Competitiveness and Industrial Change (CIC), Wissenschaftszentrum Berlin (WZB)
13.09.04 – 17.09.04	Andrew Bernard, Professor of International Economics, Tuck School of Business, Dartmouth, US
13.09.04 – 17.09.04	Peter Schott, Associate Professor of Economics, Yale School of Management, US
01.10.04 – 31.10.04	Arthur Lewbel, Professor of Economics, Boston College
04.10.04 – 08.10.04	Krishna Pendakur, Assistant Professor of Economics, Simon Fraser

04.10.04 – 30.10.04 University
Martin Browning, Professor of Economics, University of
Copenhagen

4. Overseas Visitors (more than three months)

01.09.04 – 31.08.05 Tom Crossley, Associate Professor of Economics, McMaster
University

5. Substantial Advice and Consultancy

Abramovsky, L., Battistin, E., Fitzsimons, E., Goodman, A. and Simpson, H. and The Institute for Employment Studies, evaluation of the Employer Training Pilots for the DfES

Attanasio, O. and Battistin, E., McKinsey, project on ageing and capital supply from households

Chote, R., House of Commons Treasury Select Committee, evidence about the Budget, 23 March 2004

Emmerson, C., Specialist Adviser, House of Commons Department for Work and Pensions Select Committee

Emmerson, C., advice to Conservatives; Liberal Democrats; various UK civil servants; Pensions Commission; IMF; Japanese Ministry of Health, Labour and Welfare; Japanese Ministry of Finance; Serbian Ministry of Finance

Griffith, R. and Harrison, R., currently working with and advising policy-makers at DG Economic and Financial Affairs at the European Union on issues to do with product market reforms and innovation performance across European countries

Griffith, R., Harrison, R. and Simpson, H. and Centre for Business Research, University of Cambridge, ESRC project on the contribution of Research and Technology Organisations to innovation and knowledge transfer, and the influence of fiscal policy, carried out for HM Treasury, Department of Trade & Industry and Inland Revenue

Redding, S., HM Treasury Productivity and Innovation Training

6. Conference Papers and Seminar Presentations

Adam, S., 'Children in the tax and benefit system', Public Economics Lectures, Oxford and Cambridge.

Adam, S., 'Personal tax and benefit reforms', IFS Post Pre-Budget Report Briefing, IFS, London, 3 December.

Banks, J., Blundell, R. and Emmerson, C. (2004), 'The balance between DB, DC and state provision', special session, European Economic Association, Madrid, August.

Banks, J., Blundell, R., Emmerson, C. and Oldfield, Z. (2004), 'Social security and the well-being of the elderly in the UK', NBER conference, London, 29 May.

Battistin, E., 'The impact of measurement error on the estimation of treatment effects', departmental seminar, Economics Department, University of Bristol, 30 November.

Battistin, E., 'Mismeasured schooling and the returns to education: evidence from the UK', Italian Meeting of Labour Economists, Modena, Italy, 23–24 September.

Battistin, E., 'The effect of measurement error on evaluation methods based on strong ignorability', European Meeting of the Econometric Society, Madrid, Spain, 20–24 August.

Battistin, E., 'What happened to consumption inequality in the US and what can we learn from it?', NBER Summer Institute 2004, Economic Fluctuations and Growth Working Group on Aggregate Implications of Microeconomic Consumption Behavior, Cambridge, MA, 19–23 July.

- Battistin, E., 'The effect of measurement error on evaluation methods based on strong ignorability', Econometric Study Group, Bristol, 15–17 July; discussion of M. Lechner, 'Dynamic Treatment Effects'.
- Battistin, E., 'The effect of measurement error on evaluation methods based on strong ignorability', North American Summer Meeting of the Econometric Society, Brown University, Providence, 17–20 June.
- Battistin, E., 'The impact of measurement error on the estimation of treatment effects', internal seminar, IFS, London, 14 June.
- Battistin, E., 'The effect of measurement error on evaluation methods based on strong ignorability', Microeconometrics of Spatial and Grouped Data, Banff, Canada, 24–29 April.
- Battistin, E., 'The effect of measurement error on evaluation methods based on strong ignorability', TI Research Group, Tinbergen Institute, Amsterdam, 10 February.
- Blundell, R., Mackintosh Lectures, Queens University, Canada, November.
- Blundell, R., 'Private pension arrangements and retirement in Britain', British Association Festival of Science, Exeter University, 7 September.
- Blundell, R., Arrow Lectures, Stanford University, May.
- Blundell, R., Browning, M. and Crawford, I., 'Best nonparametric bounds to price responses', presented at the European Meetings of the Econometric Society, Stockholm, August.
- Bond, S., 'Tax coordination in the EU', panel discussion, CEPII conference on tax competition, Prague, December.
- Bond, S., 'Dividend taxation, dividend policies, and investment', University of Warwick seminar, November.
- Bond, S., 'UK company investment', GES investment seminar, HM Treasury, September.
- Bond, S., 'Microeconomic evidence on uncertainty and investment', Bank of England seminar, September.
- Bond, S., 'Adjustment costs and the identification of Cobb Douglas production functions', conference in memory of Tor Jakob Klette, University of Oslo, August.
- Bond, S., 'Uncertainty and investment: an empirical investigation using data on analysts' profits forecasts', European University Institute, Florence, May.
- Bond, S., 'Technology and financial structure: are innovative firms different?', Bundesbank Spring Conference, April.
- Bond, S., 'Capital allowances, leasing, and the cost of capital', Finance Leasing Association conference, London, January.
- Bottazzi, R., 'Labour market participation and mortgage related borrowing constraints', Italian Meeting of Labour Economists, Modena, 23–24 September.
- Bottazzi, R., 'Retirement expectations, pension reforms and their effect on private wealth accumulation', European Economic Association Meeting, Madrid, 20–24 August.
- Brewer, M., 'The 10-year strategy for childcare', IFS Post-Pre-Budget Report Briefing, IFS, London, 3 December.
- Brewer, M., 'Maintaining momentum in tackling child poverty', Social Mobility and Life Chances forum, Institute for Public Policy Research, 3 December.
- Brewer, M., 'Did the WFTC work? Analysing labour supply and take-up responses to in-work benefits reform', Policy Studies Institute Employment Seminar Series, October (co-funded with Inland Revenue).
- Brewer, M., 'Did the WFTC work? Analysing labour supply and take-up responses to in-work benefits reform', Work and Pensions Economics Group Conference, Royal Holloway College, July (co-funded with Inland Revenue).
- Brewer, M., 'Individual and joint assessment: can they happily co-exist?', Institute for Public Policy Research Tax and Benefit Seminar Series, February.
- Brewer, M., 'Low income in work', Joseph Rowntree Foundation's Making Work Pay seminar, January.
- Chote, R., 'Economic policy in the UK', Hansard Society, 1 November.

- Chote, R., 'Housing and the Spending Review', National Housing Federation Annual Conference, 23 September.
- Chote, R., 'Use of official statistics', Statistics Commission Open Meeting, 22 September.
- Chote, R., 'Tax and spend: the election battle lines', Chartered Institute of Public Finance and Accountancy, 16 June.
- Chote, R., Presentation to leader writers' lunch, The Guardian, 27 May.
- Chote, R., 'Early years interventions and life chances', Social Market Foundation, 17 May.
- Chote, R., 'Tax and spend: the election battle lines', City Monetary Group, 11 May.
- Chote, R., 'Fiscal context and the Spending Review', Public Finance Roundtable, 22 April; 'Public sector efficiency', 21 October.
- Chote, R., 'Distributional analysis', IFS Post Budget Report Briefing, IFS, London, 18 March.
- Chote, R., 'Public finances and public spending', Society of Business Economists, 10 March.
- Chote, R., BBC Pre-Budget briefing, Millbank, 9 March.
- Chote, R., ESRC Parliamentary Briefings: Conservatives, 9 March; Labour, 10 March; Liberal Democrats and crossbenchers, 11 March.
- Chote, R., 'Options for the Budget and Spending Review', PriceWaterhouseCoopers Heads of Tax Breakfast, 10 February.
- Chote, R., Green Budget presentation, IFS North West, 5 February.
- Disney, R., 'Pension reform', CERGE, Prague, 15 November.
- Disney, R., (co-)presenter, British Association Festival of Science, Exeter University, 6-7 September.
- Disney, R., presentation, CeRP conference on retirement and pensions, Turin, 25 June.
- Disney, R., participant and discussant, RTN Economics of Ageing workshop, Mannheim, 6-7 May.
- Disney, R., 'Pension reform', Oslo, Norway, 23 April.
- Disney, R., presenter, RES Conference Special Session on Public Policy Transfer, Swansea, 6 April.
- Disney, R., participant and presenter, Tilburg CentER workshop on retirement, 25 March.
- Disney, R., 'European social security reform' DWP, 5 February.
- Emmerson, C., 'Mix of UK pension provision: trends and consequences', Public Economics Working Group, Essex University, 9 December.
- Emmerson, C., 'Uncertainty in the forecasts', IFS Post Pre-Budget Report Briefing, IFS, London, 3 December.
- Emmerson, C., 'Impact of the pension credit', presentation to the House of Commons DWP Select Committee, 27 October.
- Emmerson, C., 'UK pensions policy and implications for retirement saving decisions', Standard Life fringe meeting at the Labour Party Conference, Brighton, 27 September.
- Emmerson, C., 'UK public pension reform: what effect on the finances of pensioners?', British Association Festival of Science, Exeter University, 7 September.
- Emmerson, C., 'Retiring later?', Work Foundation conference, London, 21 July.
- Emmerson, C., 'Public spending', IFS Post Spending Review Briefing, IFS, London, 13 July.
- Emmerson, C., 'Social security and the well-being of the elderly in the UK', NBER International Social Security group annual meeting, London, 29 May.
- Emmerson, C., 'Public sector spending: the bigger picture', Financing the Public Sector, Leasinglife conference, London, 27 April.
- Emmerson, C., 'Pensions, pensioners and pensions policy: financial security in UK retirement saving?', ESRC Policy Seminar, Whitehall, London, 25 March.
- Emmerson, C., 'Public spending', IFS Post Budget Report Briefing, IFS, London, 18 March.
- Emmerson, C., 'Tax and spend: the Budget and the battleground', presentation to BBC journalists, White City, London, 11 March.
- Emmerson, C., 'International trends and the need for comparative research', Age Concern conference, London, 10 February.

- Fitzsimons, E., 'Funding higher education', Public Economics Lectures, Oxford and Cambridge.
- Frayne, C., 'Fiscal policy since 1997', Public Economics Lectures, Oxford and Cambridge.
- Frayne, C., 'The public finances', IFS Post Pre-Budget Report Briefing, IFS, London, 3 December.
- Frayne, C., 'The impact of financial incentives on education participation', conference on research in economic theory and econometrics, Syros, Greece, 14 July.
- Frayne, C., 'The public finances', IFS Post Budget Report Briefing, IFS, London, 18 March.
- Griffith, R., presentation, Productivity Seminar organised by the ESRC at HM Treasury, September.
- Griffith, R., presentation of work on vertical integration and outsourcing, meeting of the European Commission High Level Group of Experts on Globalisation and Outsourcing, hosted by EC member Mr. Erkki Liikanen, 14 April.
- Griffith, R. and Harrison, R., 'Measuring competition', Competition Commission, 14 December.
- Harrison, R., 'Does innovation stimulate employment? A firm-level analysis using comparable micro data from four European countries', University of Tilburg, Netherlands, November.
- Harrison, R., 'How special is the special relationship? Using the impact of US R&D spillovers on UK firms as a test of technology sourcing', World Intellectual Property Organisation, Geneva, October.
- Harrison, R., 'How special is the special relationship? Using the impact of US R&D spillovers on UK firms as a test of technology sourcing', European Economic Association, Madrid, August.
- Harrison, R., 'Productivity and government policy towards R&D', Public Economics Lectures, Oxford and Cambridge.
- Klemm, A., 'What has been the tax competition experience of the last 25 years?', conference on tax competition in the EU25, CEPII and CERGE-EI, Prague, 16 December.
- Klemm, A., 'The Russian flat tax reform: an assessment', OECD Working Party no. 2 of the Committee of Fiscal Affairs, Paris, 11 November.
- Klemm, A., 'Economic principles for tax base definitions', Task Force on Tax Base Harmonisation, CEPS, Brussels, 15 September.
- Klemm, A., 'The Russian flat tax reform: an assessment', conference on tax systems in competition and countries in transition, University of Heidelberg and Zagreb School of Economics and Management, Zagreb, 18 June.
- Klemm, A., 'Dividend taxation in a global market: evidence from the UK', IMF Tax Policy Seminar, IMF, Washington, 11 March.
- Leicester, A., 'The taxation of housing', IFS Green Budget 2004 launch, Institute for Fiscal Studies, London, January.
- Leicester, A., 'The taxation of housing', presentation given at HM Treasury, July.
- Leicester, A., 'Inequality and 25 years of British tax-benefit reforms', IFS conference (part of Social Science Week), Institute for Fiscal Studies, London, 23 June.
- Love, S., 'The public finances and the 2004 Budget', Foreign Press Association, 16 April.
- Low, H., 'Why might unemployment insurance matter? Credit constraints and the cost of saving', Helsinki University.
- Low, H., 'Explaining changes in female labour supply in a life-cycle model', Stockholm School of Economics.
- Low, H., 'How effective are in-work tax credits?', London School of Economics.
- Meghir, C., 'Changes in the distribution of male and female wages accounting for employment composition using bounds', Invited Lecture, European Association of Labour Economists, Lisbon, 9-12 September.

- Meghir, C., 'Changes in the distribution of male and female wages accounting for employment composition using bounds', Invited Lecture, ESEM Conference, Madrid, 20–24 August.
- Meghir, C., 'The impact of the education maintenance allowance on school participation', Institute of Education Workshop on Incentives to Participate in Education, London, 9 March.
- Oldfield, Z., 'Inequality into the 21st century: recent trends in the distribution of income and expenditure', IFS conference (part of Social Science Week), Institute for Fiscal Studies, London, 23 June.
- Oldfield, Z., 'Not so brief lives: the danger of underestimating how long we will live', press briefing on the 'Seven Ages of Man and Woman' (part of Social Science Week), 18 June.
- Shephard, A., 'Inequality and living standards', Public Economics Lectures, Oxford and Cambridge.
- Sianesi, B., 'Misreported schooling and returns to educational qualifications in the UK', econometrics lunch seminar, University College London and IFS, 16 November.
- Sianesi, B., 'Evaluating the impact of education on earnings in the UK: models, methods and results from the NCDS', IDEA (ISFOL Debates on Evaluation) Seminar, National ESF Evaluation Unit, Rome, 18 October.
- Sianesi, B., 'Returns to education: a non-technical summary of the CEE work and policy discussion', Seminar on Returns to Workforce Skills, Department for Trade and Industry, 9 March.
- Sianesi, B., 'Differential effects of Swedish active labour market programmes for unemployed adults during the 1990s', Nordic Conference 2004 on the Effects of Labour Market Policy and Education, Schäffergaarden, Denmark, 26–28 February.
- Simpson, H., 'Assessing policy intervention in exports and FDI', DTI UK Trade and Investment workshop, November.
- Simpson, H., presentation, Productivity Seminar organised by the ESRC at HM Treasury, September.
- Simpson, H., 'Regional Selective Assistance, agglomeration and firm formation', Regional Data and Analysis workshop, Office for National Statistics, London, July.
- Simpson, H., 'Regional Selective Assistance, agglomeration and firm formation', CEPR Integration and Technological Change: Challenges for European Regions conference, Paris, June.
- Simpson, H., 'Designing an evaluation of the SMEs R&D tax credit', DTI Evaluating Business Support Policies conference, February.
- Slade, M., 'The role of economic space in decision making', ADRES Lecture, Paris, January.
- Wakefield, M., 'Pensions and savings in the UK', Public Economics Lectures, Oxford and Cambridge.

IFS Conferences

Supporting families: the costs and benefits of children	14.01.04
Nutrition and education in rural Colombia	20.01.04
Green Budget 2004: press briefing	28.01.04
Green Budget 2004	28.01.04
Post-Budget briefing 2004	18.03.04
Households below average income 2004	30.03.04
Debt problems among families with children	01.04.04
Gorman memorial conference	11.06.04
ESRC Econometric Study Group seminar	17.06.04
Inequality into the 21st century	23.06.04
Spending Review briefing 2004	13.07.04
Econometric Study Group annual conference	15.07.04
IFS annual lecture 2004	26.10.04

Has Labour made work pay?	17.11.04
Pre-Budget briefing 2004	03.12.04

7. Media Coverage: Newspapers

National Dailies

Daily Mail	14.01.04, 14.01.04, 16.01.04, 29.01.04, 30.01.04, 31.01.04, 17.02.04, 10.03.04, 12.03.04, 15.03.04, 18.03.04, 19.03.04, 19.03.04, 22.03.04, 24.03.04, 15.04.04, 21.08.04, 08.09.04, 21.09.04, 21.09.04, 17.11.04, 19.11.04, 03.12.04, 03.12.04, 04.12.04
Daily Telegraph	26.01.04, 26.01.04, 29.01.04, 29.01.04, 02.02.04, 17.02.04, 19.03.04, 19.03.04, 07.04.04, 10.05.04, 11.05.04, 22.05.04, 03.06.04, 03.06.04, 05.06.04, 14.06.04, 06.07.04, 14.07.04, 14.07.04, 07.09.04, 07.09.04, 13.09.04, 21.10.04, 19.11.04, 22.11.04, 29.11.04, 03.12.04, 04.12.04, 06.12.04, 22.12.04
Financial Times	14.01.04, 22.01.04, 24.01.04, 24.01.04, 29.01.04, 29.01.04, 29.01.04, 31.01.04, 16.02.04, 17.02.04, 18.02.04, 20.02.04, 02.03.04, 05.03.04, 06.03.04, 08.03.04, 08.03.04, 08.03.04, 09.03.04, 18.03.04, 19.03.04, 19.03.04, 19.03.04, 19.03.04, 30.03.04, 22.05.04, 24.05.04, 04.06.04, 09.06.04, 19.06.04, 24.06.04, 06.07.04, 07.07.04, 10.07.04, 12.07.04, 12.07.04, 13.07.04, 14.07.04, 17.07.04, 19.07.04, 22.07.04, 26.07.04, 04.08.04, 07.08.04, 20.08.04, 08.09.04, 11.09.04, 21.09.04, 25.09.04, 25.09.04, 05.10.04, 09.10.04, 18.10.04, 21.10.04, 21.10.04, 25.10.04, 12.11.04, 16.11.04, 18.11.04, 18.11.04, 19.11.04, 20.11.04, 27.11.04, 29.11.04, 29.11.04, 30.11.04, 30.11.04, 04.12.04, 04.12.04, 04.12.04, 04.12.04, 11.12.04, 15.12.04, 21.12.04
Guardian	10.01.04, 14.01.04, 24.01.04, 26.01.04, 17.02.04, 12.03.04, 13.03.04, 15.03.04, 18.03.04, 18.03.04, 19.03.04, 20.03.04, 22.03.04, 31.03.04, 31.03.04, 02.04.04, 17.04.04, 30.04.04, 17.06.04, 24.06.04, 24.06.04, 25.06.04, 28.06.04, 30.06.04, 01.07.04, 13.07.04, 14.07.04, 14.07.04, 16.07.04, 16.07.04, 21.09.04, 30.09.04, 23.10.04, 02.11.04, 19.11.04, 01.12.04, 03.12.04, 03.12.04, 03.12.04, 03.12.04, 04.12.04, 07.12.04, 09.12.04, 09.12.04, 21.12.04
Independent	20.01.04, 27.01.04, 29.01.04, 30.01.04, 30.01.04, 17.02.04, 16.03.04, 17.03.04, 18.03.04, 19.03.04, 10.07.04, 13.07.04, 14.07.04, 24.08.04, 02.09.04, 08.09.04, 09.09.04, 21.10.04, 04.12.04, 04.12.04
Times	08.01.04, 28.01.04, 29.01.04, 10.02.04, 15.02.04, 17.02.04, 05.03.04, 18.03.04, 19.03.04, 19.03.04, 20.03.04, 20.04.04, 23.04.04, 28.04.04, 21.06.04, 05.07.04, 05.07.04, 13.07.04, 14.07.04, 16.07.04, 02.10.04, 21.10.04, 29.11.04, 02.12.04, 03.12.04, 04.12.04, 09.12.04, 13.12.04
Other dailies	14.03.04, 19.03.04, 20.04.04, 25.06.04, 25.06.04, 12.07.04, 04.08.04, 25.08.04, 07.09.04, 08.09.04, 02.11.04, 20.11.04, 20.11.04, 04.12.04, 04.12.04, 04.12.04

01.11.04, 19.11.04, 19.11.04, 19.11.04, 23.11.04, 26.11.04,
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- Chote, R., 'All that effort goes to waste', *Independent on Sunday*, 8 February 2004.
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- Emmerson, C. and Love, S., 'No pain, no efficiency gain', *Public Finance Magazine*, 23 July 2004.
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- Love, S., 'Put a spring in your step', *Local Government Chronicle*, 1 September 2004.

8. Media Coverage: Radio and TV

National Television

BBC 1	Breakfast News	Chote, R.	15.01.04, 16.02.04
	News at One	Chote, R.	16.02.04, 04.03.04
		Emmerson, C.	09.07.04, 02.12.04
		Frayne, C.	16.03.04
	Panorama	Chote, R.	14.03.04
	6 O'Clock News	Chote, R.	16.02.04, 17.03.04, 13.09.04
		Emmerson, C.	02.12.04
		Frayne, C.	14.09.04
	10 O'Clock News	Chote, R.	16.02.04, 04.03.04
		Emmerson, C.	02.12.04
BBC 2	If...	Chote, R.	18.02.04
	Newsnight	Chote, R.	16.02.04, 04.03.04, 17.03.04, 12.07.04, 04.10.04, 10.11.04
		Dearden, L.	08.01.04
		Goodman, A.	21.01.04
	The Daily Politics	Dearden, L.	07.01.04
	Working Lunch	Dearden, L.	09.01.04
BBC 3	7 O'Clock News	Chote, R.	16.02.04
	BBC News 24	Chote, R.	16.02.04, 15.06.04
Bloomberg TV		Frayne, C.	14.09.04
		Goodman, A.	08.01.04
	PBR Programme	Frayne, C.	02.12.04
	News	Chote, R.	28.01.04, 17.03.04
Channel 4		Emmerson, C.	29.09.04
	Evening News	Chote, R.	08.01.04, 16.02.04
		Emmerson, C.	16.02.04, 25.04.04, 02.05.04
Channel 5	Lunchtime News	Emmerson, C.	16.02.04
	News	Emmerson, C.	16.02.04
ITV	Evening News	Chote, R.	16.02.04, 10.11.04
		Frayne, C.	12.07.04, 21.12.04
	News at 7.00	Frayne, C.	20.09.04
	News at 10.30	Chote, R.	16.02.04, 17.03.04
ITV News Channel	News	Chote, R.	12.07.04
		Emmerson, C.	16.02.04, 04.06.04
Sky TV	News	Chote, R.	16.02.04
National Radio			
BBC Asian Network	News	Adam, S.	14.01.04
		Wakefield, M.	12.10.04
BBC Radio 4	Analysis	Chote, R.	11.03.04

	Moneybox	Adam, S.	15.10.04
		Chote, R.	31.01.04
		Emmerson, C.	04.12.04
	Today	Chote, R.	4.10.04
		Emmerson, C.	07.01.04, 16.01.04, 16.02.04, 16.03.04, 10.05.04, 12.07.04, 20.09.04
	Westminster Hour	Chote, R.	15.02.04
	World at One	Chote, R.	16.02.04, 19.11.04
		Emmerson, C.	17.03.04, 03.06.04, 02.12.04
	World this Weekend	Chote, R.	08.06.04
	World Tonight	Chote, R.	16.02.04, 17.02.04, 04.03.04, 17.03.04, 09.07.04
		Emmerson, C.	23.09.04
BBC Radio 5 Live	Breakfast Programme	Dearden, L.	27.01.04
	Breakfast with Nicky Campbell	Chote, R.	16.02.04
	Drive Time	Adam, S.	14.01.04
		Emmerson, C.	16.02.04, 12.07.04
		Frayne, C.	22.04.04
	Midday	Goodman, A.	08.01.04
	News	Chote, R.	12.07.04
Bloomberg Radio	News	Chote, R.	08.07.04
Local Radio			
BBC radio (various)	News	Emmerson, C.	16.03.04, 08.12.04
BBC Radio Cambridge	News	Adam, S.	14.01.04
BBC Radio Scotland	News	Adam, S.	14.01.04
		Emmerson, C.	16.02.04
BBC Radio Wales	News	Frayne, C.	16.02.04
BBC Three Counties Radio	News	Emmerson, C.	12.07.04
BBC WM Radio (West Midlands)	News	Adam, S.	14.01.04
Foreign and International Radio			
BBC World Service	News	Emmerson, C.	16.03.04
Radio Canada	News Bulletin (French language)	Frayne, C.	29.04.04
Webcasting			
Cantos	Webcast	Love, S.	14.07.04

9. International Collaborative Research Projects

Abramovsky, L., Griffith, R., Harrison, R. and Simpson, H., Innovation and Employment in European Firms, <http://www.eco.uc3m.es/IEEF/>

Blundell, R. and Emmerson, C., NBER project on International Social Security

Klemm, A., 'The Russian flat tax reform: an assessment', with Michael Keen and Anna Ivanova (International Monetary Fund, Washington)

Klemm, A., 'Globalisation and the tax mix', with Andreas Haufler (University of Munich, Germany) and Guttorm Schjelderup (University of Bergen, Norway)

Visits Abroad by Centre Staff and Fellows

Blundell, R., Stanford University, May 2004

Blundell, R., Mannheim University, October 2004

Blundell, R., IMF, November 2004

Blundell, R., New York University, November 2004

Blundell, R., Queens University, Canada, November 2004

Disney, R., Visiting Professor, School of Economics, University of New South Wales, Australia, November 2003 to January 2004

Disney, R., Centre for Finance and Consumption, EUI, Florence, May 2004

Meghir, C., British Embassy, Buenos Aires, November 2004