

Part 1: Executive summary

- The ESRC Centre for Microeconomic Analysis of Public Policy (CPP) sits at the core of the Institute for Fiscal Studies (IFS) and is central to the research carried out and disseminated by IFS. The IFS as a whole seeks to carry out empirical microeconomic work of the highest quality and relevance, and to impact on policy and the public debate.
- The ESRC Centre is fundamental to the IFS' success. It provides the long-term funding that allows IFS to carry out groundbreaking independent research in economics and microeconometrics, and to invest in developing a unique range of models and datasets. It is only through ESRC Centre funding of the CPP that the IFS is able to maintain the combination of impartiality, rigour and authority which are essential to achieve wide-ranging impact on policy and to inform the public debate. It ensures that any evidence we use is underpinned by deep, unbiased intellectual foundations.
- Our objectives were to promote and inform the design of effective and coherent public policy, based on a detailed understanding of the impact that different interventions and changes in the economic environment have on the behaviour of individuals, families, firms and governments. We have successfully delivered on these objectives.
- We have made important contributions in terms of scientific outputs and towards promoting and informing the design of effective and coherent public policy in the four broad strands: i) wages, human capital and education; ii) labour supply, health and retirement; iii) savings, housing and consumer behaviour; and iv) firms and corporate behaviour. We brought new theory, new data and new econometric techniques to bear on in each of these strands to improve our understanding of the microeconomic behaviour of individuals, households, firms and governments.
- The team-based nature of research at CPP provides a continuous environment for advanced training for PhD students and early career researchers. The Centre attracts and trains talented researchers and offers a stimulating working environment by maintaining an impressive global network of research fellows, associates and visitors.
- We have worked closely with a number of other ESRC investments at Essex (Understanding Society), UCL (Cohort Studies and CLOSER) and LSE (CEP), as well as with those analysing linked datasets (in research institutions and in government) in order to maximise the value of synergies between their work and ours.
- Internationally, we have worked with the NIA-funded ageing studies in the US, UK, Europe, China, India, Brazil, Chile, Japan and many other countries on various data collection initiatives. We have collaborated with international institutions (e.g. IADB, the World Bank and EBRD) to ensure that the lessons learned in our data initiatives are used in a wide range of contexts.

- We have used the media to inform the public, working intensively with journalists in print and broadcast media to deliver the key messages of our research. We have engaged extensively with political, business, education, social affairs and economics correspondents. Our website, public lectures and targeted events mean that we have engaged with students and the wider community, promoting the outcomes of our research.
- Over the period of the Centre we sent 793 tweets (since opening a Twitter account in 2013; we now have over 17,800 followers and receive around 4,200 impressions per tweet); we wrote 152 web observations; wrote 79 impact vignettes which were published online illustrating the impact of Centre-funded research. During 2015, we received over 3,400 mentions in the printed media, 19,000 online mentions and 7,000 broadcast mentions.
- The CPP will continue to use and build upon its expertise developed under this grant to apply leading edge economics and econometrics to problems of scientific and policy interest. We will continue to develop new econometric techniques, to help develop new data availability, including linked survey and administrative data, to push our research agenda in exciting new directions. This work will be helped by a new grant from the ESRC to fund future new work at CPP, and also by the co-funding that we plan to raise.

Part 2: Introduction

The ESRC Centre for Microeconomic Analysis of Public Policy (CPP) sits at the core of the Institute for Fiscal Studies (IFS) and is central to the research carried out and disseminated by IFS. The IFS as a whole seeks to carry out empirical microeconomic work of the highest quality and relevance, and to impact on policy and the public debate.

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The IFS was founded in 1969. Established as an independent research institute, IFS was launched with the principal aim of better informing public debate on economics in order to promote the development of effective fiscal policy. Through the establishment of rigorous independent research, for example the *IFS Green Budget and Post Budget analysis*, IFS successfully opened up debate about public policy to a wider audience and influenced policy decision making.

The ESRC and IFS created a new centre for academic excellence in microeconomic research in 1991. Today, the CPP and IFS together represent Britain's leading independent microeconomic research institute. Our research remit is one of the broadest in public policy analysis, covering subjects from tax and benefits to education policy, from labour supply to corporate taxation. Our research has gained a worldwide reputation for academic rigour, and contributes to the development of academic scholarship, as well as having considerable impact on policy makers, think tanks and practitioners. We communicate our research widely on a national and international scale, providing independent advice to policy makers in the UK, Europe and in developing countries; collaborating with world renowned academics on new economic theories and techniques; and disseminating our research globally through the press, media and the web.

The current Centre is Directed by Professor Sir Richard Blundell (UCL) with Co-Directors Professor Orazio Attanasio (UCL), Professor James Banks (University of Manchester), Professor Ian Crawford (University of Oxford), Professor Rachel Griffith (University of Manchester) and Professor Imran Rasul (UCL). The Advisory Committee is Chaired by Professor Alan Auerbach (Berkeley), with members Professor Sir Charles Bean (LSE), Professor John Ermisch (University of Oxford), Professor John Hills (LSE), Professor Thierry Magnac (University of Toulouse), Mr Will Morris (GE), Professor Coen Teulings (University of Cambridge), Professor David Ulph (University of St Andrews) and Ms Sharon White (OfCom). Other members of the Advisory Board during 2010-2015 were Robert Devereux (DWP) to 2014; Jonathan Portes (NIESR) to 2012; and Rosemary Radcliffe (to 2012).

Part 3: Centre objectives

Objectives from the original bid

Our objectives were to promote and inform the design of effective and coherent public policy, based on a detailed understanding of the impact that different interventions and changes in the economic environment have on the behaviour of individuals, families, firms and governments. We have successfully delivered on these objectives. The programme of research we set out built on the excellent track record of the ESRC Centre at IFS, which has played an indispensable role in establishing IFS as an institution recognised worldwide as the UK's leading independent centre for microeconomic research.

We brought new theory, new data and new econometric techniques to bear on understanding the microeconomic behaviour of individuals, households, firms and governments. We developed better dynamic models of behaviour that take explicit account of uncertainty, a deeper analysis of the role of market frictions in determining the ability of individuals to insure against risk, and an innovative approach to empirical measurement in both conventional and new dimensions of behaviour.

Our research covered four broad strands: i) wages, human capital and education; ii) labour supply, health and retirement; iii) savings, housing and consumer behaviour; and iv) firms and corporate behaviour. These are all areas in which the greater mobility of goods and services, labour, capital and intellectual property that characterise globalisation create important new challenges, because they confront economic agents with new shocks and uncertainties, and opportunities, because they expand the mechanisms through which they can respond.

The links between the various strands of research are crucial, as illustrated by the research we describe below, and continue to provide a key motivation for carrying out this broad research programme at the IFS. For example, human capital formation is central to understanding work opportunities, labour supply behaviour to understanding the design of pension reform, human capital to understanding innovation by companies, consumer behaviour to understanding firms' pricing decisions, and so on. Too often policymakers take decisions without considering or realising the broader, perhaps unintended, consequences.

The IFS has continued to play an important role in studying these linkages, and bringing them to the attention of policy makers and the wider user community. Our ability to do this rests on the investments we make in maintaining and strengthening the platform of rigorous analysis, institutional understanding and up-to-date empirical evidence from which we are able to analyse and comment upon economic and policy developments as they happen. Our ability to respond flexibly and authoritatively to the evolving policy debate is greatly valued by the many influential stakeholders we share with the ESRC.

The main outputs of the ESRC Centre at IFS have been cutting-edge research findings, published in the top international journals and communicated in non-technical form to policymakers, the media, parliamentarians, civil society organisations, business and the general public. Our priority has been to ensure

that research of the highest intellectual and academic quality has the greatest possible practical impact.

We highlight some of our main achievements under each of the four broad topics we outlined in our proposal.

Wages, human capital and education

Human capital, people's productive skills and technical knowledge, is a key driver of living standards. We have developed a clearer understanding of the determinants of, and the returns to, human capital through the life cycle. From the earliest stages of life, nutrition, health, education and the home learning environment are key inputs into the process of human capital accumulation. We have undertaken research that help us to understand the importance of these different investments in determining human capital, how these investment choices are made and how policy can influence them. Our research has considered these issues in both industrialised countries, such as the UK, and developing countries, where human capital investments are likely to play a key role in reducing poverty.

Policymakers and researchers increasingly focus on policies that drive human capital formation from a very early age, reflecting evidence that this is very important for people's long-term life chances. We have investigated the relationship between parental investments, government policy and a broad set of child outcomes (both cognitive and non-cognitive), with the aim of informing policy design.

One strand of work has considered how parents allocate time and money towards their children's education, and how these investments affect educational outcomes. We examined the impact of public investments on the allocation of resources within the household when there is more than one child, since government policies towards one child are likely to affect parental investments in others. We studied parents' preferences for schools in England. We made considerable progress on understanding household choices over maternal work, food and nutrition using UK household food surveys from 1980 to 2010. In work with ISER we studied the provision of childcare.

Early childhood experiences are particularly critical for human capital formation in developing countries. We have worked with a number of institutions, as well as local researchers and policymakers in the relevant countries to test the effectiveness of interventions using field experiments. A novel aspect of our work in this area has been not just to evaluate the impact of the specific policy intervention, but also to collect a wide variety of other information that has allowed us to model household behaviour and address the developmental questions more broadly. This has allowed us to gain insights into decisions over education, child labour and the allocation of resources within households, which enables us to provide better policy design and targeting.

We obtained results from estimating production functions for cognitive and socio-emotional skills in early life. We have estimated production functions for cognitive and socio-emotional skills in early childhood, drawing on detailed data from an early childhood intervention that Centre researchers ran in Colombia. This found strong evidence that a child's current stock of skill fosters the

development of future skills, and that parental investments and parental human capital are complementary in the production of future skills. We have used the framework to understand the channels through which the elements of the intervention boosted the cognitive and socio-emotional skills of treated children. Analysis of the impacts of education and skills training interventions targeted towards adolescent girls in East Africa was developed a through working paper entitled 'Empowering adolescent girls: evidence from a randomized control trial in Uganda', which evaluates the impact of a programme providing vocational training and health information to young women.

Another strand of our research developed our understanding of how educational investments are made by households and how they are affected by policy. In the UK, access to Higher Education by individuals from lower-income backgrounds is a key issue that we worked on. We used models of lifetime earnings processes and the returns to higher education to carry out a detailed analysis of the government announcements about the funding of higher education following the Browne Review in the autumn of 2010. Also in the UK we analysed the consequences and determinants of early cognitive and non-cognitive social skills to take into account evolution of economic and non-economic outcomes across the life cycle using NCDS data. We developed and estimated a model of human capital accumulation and lifetime labour supply in the presence of tax credits and other important elements of the tax and benefit system. We designed questions to measure potential drivers of young people's education choices (with the Centre for Longitudinal Studies).

Another strand of our research aimed to better understand the human capital production function in developed countries such as the UK by looking at public spending in schools and the effectiveness which schools operated. We produced a report for Sutton Trust comparing mix of students at grammar schools with mix in local area. We completed research on the effects of teacher pay on pupil attainment. We linked the National Pupil Database (NPD) to MCS teacher survey to significantly enhance NPD. We analysed the discontinuities in teacher pay to estimate the effect of teacher pay levels on recruitment and retention of teachers as well as the consequences for pupil attainment.

Understanding wage determination is a key input into our work on labour supply, on savings behaviour and on firm behaviour. In addition to human capital formation, other important factors include job search frictions, market structure and possible complementarities between skill levels and firm productivity/technology. The public sector is a major employer and we undertook an analysis of public-private wage differential. This work fed into responses to the new OBR forecasts.

The Great Recession led to large shocks to the productivity of firms and workers, and we published two papers on the productivity puzzle in the UK, which received wide media coverage. We produced two publications that updated and improve simulations of graduate lifetime earnings profiles and the way these profiles are linked to individuals and institutions. Based on this we gave advice to analysts at BIS responsible for government's estimates of the RAB charge.

Labour supply, health and retirement

The microeconomic analysis of taxation and labour supply continues to be a core component of our research. We undertook research to understand the behavioural effects of taxes and benefits on labour supply decision. Research at the Centre has played a major role in understanding work incentives in the tax and benefit system and labour supply responses to taxation. A well-designed tax and benefit system should be appropriate to the existing wide variation in lifetime earnings patterns and able to adapt to future changes in the pattern of working lives. It should strike an appropriate balance between preserving the incentives for the productive use of labour in the economy while providing support for individuals and families with low or no earnings. The highly influential Mirrlees Review was completed and published in this period, and raised a number of substantive new research ideas across a wide range of aspects of tax and benefit design.

We assessed the impact of government's benefit reforms (especially Universal Credit) on work incentives for different groups and how labour supply might respond. We analysed the nature of responses in taxable income to the higher rate of income tax. We produced an empirical analysis of the relationship between National Insurance contributions and distribution of earnings. We adapted the IFS TAXBEN model to run on data from the English Longitudinal Study of Ageing (ELSA) and modified the tax and benefit simulation code in order to model disability benefit entitlements using the detailed information on individual health and disability that is available from the ELSA data. We constructed a tax and benefit simulation model for Mexico and used it to estimate the effects of tax reform options with and without allowing for behavioural responses to tax changes.

We documented the key facts underlying the evolution of labour supply at the extensive and intensive margins in the last 40 years in three countries: US, UK and France. We also used our work on the dynamics of female labour supply, jointly with education choices, to evaluate the life-cycle impact of tax credit reforms and redistribution and incentive effects of the tax system. We built models that combine FES and FRS data to estimate the labour supply responses of married couples in the last 30 years in order to understand the extent to which changes in benefits and taxes have contributed to the changes we see over time. We developed a new methodology for relating micro to macro responses to tax reforms on labour market outcomes over the life cycle.

The labour supply of older working-age people is a key policy concern, that structural changes in the demand for skills have made even more pressing. Participation rates for those aged 50 and over have been slowly rising over the last decade, but they are still low by historic standards and often considered too low given concern about the adequacy of future retirement incomes. Much of this work was recently brought together in the IFS Annual Lecture 2015 by Professor James Banks on extending the working lives of older workers.

Our research in this area has included an assessment of how taxes and benefits redistribute income and affect work incentives from a life-cycle perspective; this work has been presented to policy makers in Whitehall and published in a number of outlets. We analysed how taxable incomes are affected by the higher rate of income tax using the Survey of Personal Incomes. We co-funded an

analysis of the effect of increasing female state pension age on the labour market activity of older women, presented and summarised in a working paper with the Nuffield Foundation. We analysed pension wealth and contribution dynamics included in the wave 5 ELSA report.

We have estimated individuals' state pension entitlements under alternative pension systems using linked administrative and survey data, and analysed how the state pension system affects the distribution of income across individuals' lifetimes and between individuals. We have used administrative earnings data, linked to household survey data, to estimate a life-cycle model of retirement wealth accumulation, with heterogeneous earnings processes. We reported on the single-tier pension proposals made in July 2013, which fed into evidence given to the Work and Pensions Select Committee. We adapted and extended existing microsimulation models of the pensioner population and income distribution to project the likely future level and distribution of pensioner incomes up to 2025, incorporating more recently available data and new policy announcements.

We estimated the effects of the financial crisis on wealth, life-cycle expectations and mental and psychosocial health in older adults. We deposited data with derived variables for pension wealth for ELSA respondents in the Data Archive for public access. We analysed the extent to which biological data on health risks can predict subsequent health and disability when controlling for individual socio-economic factors and subjective health assessments and health expectations. We were a partner in international comparisons of morbidity and mortality at older ages, which fed directly into the US National Academy of Science panel evidence and report on divergent trends in longevity published this year.

Savings, housing and consumer behaviour

The analysis of consumer behaviour is crucial for a variety of public policy issues, and in particular for the design of both direct and indirect taxation and for the tax treatment of savings. The measurement of consumer behaviour is at the centre of applied welfare economics and is a vital ingredient of tax policy analysis, and the measurement of market power in modern discussions of firms' pricing behaviour. Understanding individual saving behaviour is also important for the analysis of pension and social security reforms, in the context of global demographic trends and the evolution of international financial markets.

Analysis of the experimental module on risk and time preferences in ELSA was presented at ELSA Wave 5 launch. We estimated the effects of the financial crisis on wealth, life-cycle expectations and mental and psychosocial health in older adults. We updated our previous analysis of the distribution of retirement wealth and pension savings in the 50+ population and compared this with 2002 distribution. We analysed how household consumption evolved through the recent recession and how this compared to previous recessions. This work was published in October 2011.

We have developed new techniques for the estimation of consumer demand models. An empirical application illustrates the usefulness of the methods by deriving bounds and confidence sets for estimated quantile demand functions.

We coordinated work with others on cognitive ability, financial literacy and savings, bring together new international evidence on the relationship between financial literacy, numeracy and various savings and pension outcomes.

We analysed spending on household fuel, showing evidence of a strong labelling effect on Winter Fuel Payments. Related work on fuel spending identified a reduction in food spending during periods of cold weather for the poorest, suggesting an inability to smooth expenditures on necessities in the short run. We analysed a number of alternative policies to improve diet quality, and did considerable work on understanding non-standard (behavioural) models of consumer behaviour.

In another branch of our work we developed more realistic life-cycle models of consumption that include important features such as transaction costs, housing and labour supply. We published an assessment of how cuts to local housing allowance have been shared between tenants and landlords using administrative data on new claimants of LHA.

We carried out a distributional analysis of the VAT reforms and the full package of tax and benefit changes announced in the Emergency Budget. We carried out a distributional impact analysis of public spending and documented in depth what is and is not known about the redistributive effects of public sector activity. Our work was directly influential in the way in which this issue was subsequently taken up and modelled in the Spending Review consultation document.

We co-funded an analysis of the annuitisation choices and behaviour of older adults in England following up on the 2012 policy report with an academic paper in 2015. We also co-funded research on the adequacy of wealth among those approaching retirement. We estimated the impact on the propensity to save in private pensions of the up-front tax relief available on pension contributions.

We considered individual behaviour within ‘general equilibrium’ models that take into account the feedback effects prompted by the decisions people take, by projected demographic trends in both developed and developing countries, and by integrated capital markets. We constructed a general equilibrium model of the US economy to look at the consequences of changes in demographic patterns for the financing of Medicare.

We developed tax microsimulation model for Mexico to analyse consumer tax reforms in Mexico as part of a World Bank project; this is an important first step towards longer-term goals to understand how tax policy affects households in middle-income countries. We examined household responses to information on child nutrition on margins such as household consumption, in the context of a cluster randomised trial in Malawi. We analysed risk sharing in rural Colombia, relating the ability to insure idiosyncratic risk to the presence of effective networks and developing models of risk sharing with imperfectly enforceable contracts.

Firms and corporate behaviour

Understanding the factors that affect when a firm chooses to enter an industry, where it locates its activities, how it sets its prices and how it manages the workers, land, capital and intellectual property that it uses are essential to

understand how public policy affects wealth creation and success in the global economy. The increasingly international nature of firm activity presents big challenges for policymakers, especially in open economies such as the UK and many developing countries.

We used new data to model the determinants and consequences of offshoring of innovative activity. **This has become a key policy issue** in recent years: researchers and policymakers have been particularly concerned with the impact of taxes on where firms locate strategic activities such as headquarters and research labs. We wrote a paper that studied the impact of corporate taxes on firm behaviour, in particular making important advances in the way we allow for unobserved heterogeneity. In related work we showed that there are complementarities between innovative activity offshore and at home, with firms gaining access to new technologies by locating in centres of excellence abroad. This work is under revision at a journal.

The rise in obesity has meant that there has been considerable interest in understanding how food markets work, and what interventions are likely to be most effective. We have developed theoretical and empirical models of the behaviour of consumers and retailers in food, and developed access to new data sources that allow us to investigate the implications of their behaviour. We undertook an in-depth comparison of diet and nutrition across the UK, US and France. We evaluated the Healthy Start Voucher scheme on purchases of fruit and vegetable. We have developed research modelling firms' and consumers' choices between national brands and retailer own-brands. We published a briefing note on UK policy options for reducing alcohol consumption. We studied how consumer food purchasing behaviour altered over the recession, and we documented trends in food purchasing behaviour and physical activity, with rising obesity over the past 30 years. We hosted Festival of Social Science event on 'Understanding Changes in the British Diet' showcasing work on changes in food purchasing behaviour.

How our research achievements contribute to the ESRC's strategic priorities

Our research has contributed to all three of the ESRC's strategic priorities. Most directly the CPP research agenda has helped to enable the development of robust government and private sector strategies to ensure the sustainable growth of the UK economy. As detailed above, our research has evaluated a large range of government policies, and provided evidence upon which informed debate and policy formation can be based. Our work has also helped to create a better understanding of how and why people and organisations make decisions, for example, how individuals take decisions over human capital acquisition, labour market activities, retirement, saving and consumption choices, amongst others, and how these can be managed or influenced through public policy. The CPP, and IFS more broadly, also plays a direct role in providing information and analysis that enhances the role and contributions of citizens, voluntary sector organisations and social enterprises to the policy debate and therefore helps to create a vibrant national and global society.

Thanks to the support of Centre funding since 1991, IFS has established itself as the leading centre for microeconomic research and policy analysis in the UK. Our

research agenda has delivered cutting-edge theoretical and empirical innovations as well as allowing us to provide the responsive analysis of ongoing economic and policy developments that is so highly valued by many of our shared stakeholders. We have also played an important role in capacity development, providing funding for a number of PhD scholars, and by providing a career structure that trains high-quality social scientists to work both in academic research and in other fields. In addition to our direct interactions with policymakers we provide regular briefings for parliamentarians, we interact frequently with businesspeople and civil society organisations, and we inform the general public both directly and via the media. We place considerable importance on promoting the public understanding of the social sciences, including a number of events aimed at A-level and undergraduate students.

Part 4: Centre activities, outputs and impacts

Centre research activities and scholarly exchange

Centre research staff were involved in a wide range of research activities and scholarly exchanges, detailed on ResearchFish and on the IFS website. All of these helped to develop our scholarly output and promote its wider dissemination.

IFS organised over 200 workshops and conferences. These ranged widely in their target audience and in the topics covered. To highlight a few: we ran the regular Public Economics Seminar, jointly organised with STICERD at the LSE; every year we run a series of Public Economics Lectures, aimed at attracting sixth form students and undergraduates into studying economics; we held numerous events at ESRC's Festival of Social Science, for example, in November 2012 we launched research on how socio-economic differences in participation in higher education have changed since the 2006–07 higher education reforms and in November 2014 we hosted an event on 'Understanding Changes in the British Diet' showcasing work on changes in food purchasing behaviour; We ran a conference on improving the measurement of consumer expenditure in Washington DC, hosted a lecture in London by Robert B. Stack (US Department of the Treasury) on "US Views on European Tax Issues", and ran an event on understanding the changing NHS market and the role of independent care providers jointly with the Nuffield Trust.

Rachel Griffith was the Programme Chair of the Royal Economic Society's 2011 Annual Conference, and James Banks was Programme Chair of the RES 2015 Annual Conference. Throughout the period Orazio Attanasio was an organizer of the NBER Summer Institute workshop on the "Aggregate Implication of Microeconomic Consumption Behavior".

IFS researchers presented over 800 papers at conferences or seminars.

We have been involved in numerous networks, including CEPR, NBER International Social Security network, the NBER-Sloan international network on working at older ages, J-PAL, BREAD, EUDN and the IGC at LSE.

In the final year of this grant we have started to work with the NBER, with co-funding from ESRC and NIC, to coordinate an international network of researchers looking at issues surrounding the valuation of health research.

Capacity-building

The team-based nature of research at CPP provides a continuous environment for advanced training for PhD students and young researchers. In addition to these ongoing activities, over the course of the grant we:

- recruited 20 new research economists;
- held internships for 31 summer students;
- appointed and supervised nine PhD students:

Elaine	Kelly	01/10/2009	30/09/2011
Arun	Advani	01/10/2010	30/09/2013
Thibaut	Lamadon	01/10/2011	30/09/2013

Vittorio	Bassi	01/10/2011	30/09/2014
Dan	Rogger	01/10/2011	30/09/2012
Jose	Guerra Forero	01/10/2013	31/12/2014
Pamela	Jervis Ortiz	01/10/2014	30/09/2015
Manuel	Davila Estefan	01/10/2014	30/09/2015
Maria Lucia	Gomez	01/10/2014	30/09/2015

- provided support to the following members of IFS staff undertaking part-time PhD studies: Bansi Malde (ongoing); Martin O'Connell (degree awarded 2015); Peter Levell (ongoing); Jonathan Shaw (degree awarded 2015); Luke Sibieta (ongoing); Cormac O'Dea (degree awarded 2015); Gemma Tetlow (degree awarded 2015); Jonathan Cribb (ongoing); Barra Roantree (ongoing); George Stoye (ongoing); and Kate Smith (ongoing).
- each year held a Public Economics day in London with travel expenses paid to those students coming from further afield; the day included a panel session on careers in Economics;
- gave 120 lectures on Public Economics in London and at Oxford and Cambridge;
- contributed 20 articles to the *Economic Review*, an economics magazine aimed at sixth-form students;
- during the General Election campaign, Centre research staff gave extensive briefings to journalists in print, broadcast and online media to prepare them for coverage of economic issues. They also spent time at the BBC in advance of both Budgets and the Comprehensive Spending Review, to assist journalists with the economic background and to help educate and inform the wider community.
- hosted 135 visiting scholars, early-career researchers who benefited from the opportunity to discuss research and work together with Centre staff;
- held 207 seminars at which internal and external speakers presented work in progress, including 61 Public Economics seminars organised jointly with STICERD.

Communication and engagement

We held in-house broadcast training days; regular meetings of IFS communications committee; sent out quarterly newsletters; sent 793 tweets (since opening a Twitter account in 2013; we now have over 17,800 followers and receive around 4200 impressions per tweet); wrote 152 web observations; wrote 79 impact vignettes which were published online illustrating the impact of Centre-funded research. During 2015, we received over 3,400 mentions in the printed media, 19,000 online mentions and 7,000 broadcast mentions.

Major impacts: four examples of outstanding science

1) Lifetime inequality

A central issue in evaluating the impact of policies is not only how they affect individuals in the current period, but what effects they have on lifetime earnings and wellbeing. We know that lifetime inequality can differ significantly from contemporaneous inequality (Blundell, R. and Etheridge, B. (2010) "Consumption, income and earnings inequality in Britain" *Review of Economic Dynamics*, 13:1, 76-102). Work at the Centre has made several major scientific contributions to our understanding of the factors that drive lifetime inequality and how policies can target it. Research at CPP has made several major scientific contributions in this area.

Blundell (2014, "Income Dynamics and Life-cycle Inequality: Mechanisms and Controversies" *Economic Journal*, 124: 576, 289-318) focuses on the transmission of inequality over the working life. Family labour supply, the credit market and the tax system are all shown to play a key role as mechanisms to insure labour market shocks. These mechanisms vary in importance across different points of the life cycle and the business cycle. Blundell, Bozio and Laroque (2011, "Labor supply and the extensive margin" *American Economic Review*, 101:3, 482-86) use a life-cycle framework to study responses at the extensive (whether to work) and intensive (how much to work) margins. In order to do so they develop a new methodology for relating microeconomic elasticities to observed macroeconomic responses of labour market outcomes to tax reforms.

A key factor in determining lifetime inequality is the ability of individuals and groups to insure themselves against adverse shocks. Attanasio and Pavoni (2011, "Risk Sharing in Private Information Models with Asset Accumulation: Explaining the Excess Smoothness of Consumption" *Econometrica*, 79: 4, 1027-1068) provide an important contribution to our understanding of the ways that markets that allow individuals to insure themselves over their lifetime work. Blundell, Graber and Mogstad (2015, "Labor income dynamics and the insurance from taxes, transfers, and the family" *Journal of Public Economics*, 127, 58-73) study labour income dynamics and the ways that taxes, transfers, and the family provide insurance against adverse shocks. Attanasio et al (2012, "Risk Pooling, Risk Preferences, and Social Networks" *American Economic Journal: Applied Economics*, 4: 2) studied group formation when risk sharing is the objective and enforcement is scarce. Their findings indicate that where there are advantages to grouping assortatively on risk attitudes those advantages may be inaccessible when trust is absent or low.

2) Measuring expectations, risk and intertemporal preferences

Related to the first major scientific contribution, we have also made a contribution to the collection of individual-level data on *expectations, risk and intertemporal preferences*. This is an essential input for understanding risk taking behaviour, risk sharing and, ultimately, lifetime inequalities. These issues are particularly salient in developing countries, where risk is pervasive and risk sharing opportunities limited.

Much of our work has been in developing and validating measurement techniques for measuring risk and time preferences in new contexts, such as low cognition older adults, or in developing countries. We successfully completed the design and collection of data on risk and time preferences from lottery choice

experiments carried out on a sample of 1,000 older people in England, and are following this up with further data collection on numeracy, preferences and financial decision making. In addition, we have designed and implemented survey questionnaires aimed at eliciting the probability distribution of future incomes, the returns to education, and the returns to small investments in Mexico, Colombia, Mongolia and India. In the case of Colombia we have also collected data on risk attitudes, patience and information, whilst in the case of Mongolia and India we have for the first time experimented with measures aimed at assessing the degree of asymmetric information among members of micro-credit groups. These data have been used in various papers. For instance, Attanasio, Augsburg, De Haas, Fitzsimons and Hamgart (2015, "The Impacts of Microfinance: Evidence from Joint-Liability Lending in Mongolia" *American Economic Journal Applied* 7:1), look among other things at the impact of project risks on the probability of taking up a micro loan; and Attanasio and Kauffman (2014, "Education Choices and Returns to Schooling: Intra-household Decision Making, Gender and Subjective Expectations.", *Journal of Development Economics*, vol. 109(C), pp. 203-216) who look at how schooling decisions are affected by subjective expectations on the return to schooling.

3) Human capital production function

There is considerable interest in understanding how policies can affect human capital accumulation. As well as simply knowing the impact of a policy we have been interested in better understanding the mechanisms at work, i.e. what are the production functions for cognitive and socio-emotional skills, particularly in early childhood

Attanasio, Kugler and Meghir (2011, "Effects of Youth Training in Developing Countries: Evidence from a Randomized Training Program in Colombia" *American Economic Journal: Applied Economics*, 3, 188-220) have looked at the impact of training programmes on unemployed youth in Colombia.

Attanasio et al (2014, "Using the infrastructure of a conditional cash transfer program to deliver a scalable integrated early child development program in Colombia: cluster randomized controlled trial" *British Medical Journal*, 349:g5785) have looked at the impacts of a parenting intervention based on home visits and have written about how this sort of programme can be rolled out at scale in a sustainable fashion. More recently Attanasio et al (2015, "Estimating the Production Function for Human Capital: Results from a Randomized Control Trial in Colombia" *NBER WP 20965*) have estimated production functions for cognitive and socio-emotional skills in early childhood, drawing on detailed data from an early childhood intervention that Centre researchers ran in Colombia. This found strong evidence that a child's current stock of skill fosters the development of future skills, and that parental investments and parental human capital are complementary in the production of future skills. We have used the framework to understand the channels through which the elements of the intervention boosted the cognitive and socio-emotional skills of treated children.

Carneiro and Ginja (2014, "Long-Term Impacts of Compensatory Preschool on Health and Behavior: Evidence from Head Start" *American Economic Journal: Economic Policy*, 6: 4, 135-173) made an important scientific contribution to our understanding of the long-term impacts of participation in the Head Start

programme in the US on health and behaviour of participants. Carneiro, Meghir and Parey (2013, "Maternal Education, Home Environments, and the Development of Children and Adolescents" *Journal of the European Economic Association*, 11, 123-160) showed that maternal education had an important effect on the home environment, and through this on the development of children and adolescents. Crawford, Dearden and Greaves (2014, "The drivers of month of birth differences in children's cognitive and non-cognitive skills" *Journal of the Royal Statistical Society: Series A*) showed that the month of birth of a child had an important impact on the child's cognitive and non-cognitive skills development, and studied the mechanisms.

4) Revealed preference inequalities

Understanding consumer demands and how they respond to policy is an essential ingredient to much of the analysis that we do at IFS, and that economists do more generally. We have made important scientific contributions to our ability to undertake such analysis without making restrictive parametric assumptions. Blundell, Kristensen and Matzkin (2014, 'Bounding quantile demand functions using revealed preference inequalities' *Journal of Econometrics*, 179, 112–27) and Blundell, Browning, Crawford, De Rock and Vermeulen (2015, "Sharp for SARP: Nonparametric Bounds on Counterfactual Demands" *American Economic Journal: Microeconomics*, 7: 1, 43-60) develop new methods for the estimation of consumer demand models with unobserved heterogeneity subject to revealed preference inequality restrictions.

Adams, De Rock and Verriest (2014, "Consume now or later? Time inconsistency, collective choice, and revealed preference" *American Economic Review*, 104: 12, 4147-83) and Crawford and Pendakur (2013, "How many types are there?" *Economic Journal*, 123: 571, 1025–1058) use these methods to help explain the large amount of heterogeneity we see in consumer data.

Major impacts: four examples of outstanding impact outside of academia

1) Green Budget

Every year IFS published *The Green Budget* in the run up to the publication of the official Budget by the Chancellor. This provides a comprehensive analysis of the state of the public finances and analysis of the main policy options open to the Chancellor. The Green Budget is a highly influential publication. In 2015 the publication was downloaded 15,182 times during the first week after publication and the presentation slides were viewed 1,889 times. On Twitter, we circulated highlights to our 13,238 followers. They were viewed 56,072 times on Green Budget day and retweeted 160 times. Press coverage included 163 mentions in the print press, 465 online mentions and 17 broadcast interviews with IFS researchers.

Research on the composition of the fiscal consolidation undertaken by Centre researchers was included in the Bank of England's Inflation Report (February 2013). The research impacted upon the analysis of Bank of England authors and resulted in an increase (300%) in the space devoted to the discussion of fiscal policy in the publication.

2) Universal Credit

Our work on the *principles of tax and tax credit design* led to a number of important policy impacts this year. Following on from the Mirrlees Review, the Treasury Select Committee launched its own inquiry into the ‘principles which should underpin the tax system’. On 25 January 2011, the committee began by taking oral evidence from the Mirrlees Review team, followed by a panel of experts from the industry. The research also helped to stimulate new reviews of the tax system by the Dutch Parliament and by the EU Tax Commissioner.

Further impacts of the Mirrlees Review research could also be seen with regard to specific tax policies. As one example, Centre researchers played a key role in the debates surrounding the proposed introduction of the Universal Credit, for which the thinking draws directly on work published as part of the Mirrlees Review. Centre researchers presented a preliminary analysis of the likely winners and losers and an assessment of the impact on work incentives at a briefing event at IFS and gave oral evidence to the Work and Pensions Select Committee, to MPs and to members of the House of Lords at a breakfast meeting of the All-Party Parliamentary Group for Social Science and Policy.

When it introduced the new Universal Credit policy, DWP set up a new high-level independent expert advisory group. Professor Blundell represented economic expertise on this committee, whose aim is to instigate new analysis to evaluate and improve the Universal Credit reform. IFS published preliminary analysis in Brewer, M., Browne, J. and Jin, W. (2012, “Universal Credit: a preliminary analysis of its impact on incomes and work incentives” *Fiscal Studies*, 33: 1)

In September 2013, IFS held a conference in Westminster focused on welfare reform, Universal Credit and labour supply. Researchers launched a briefing note analysing the effect of the coalition government’s welfare reforms on financial work incentives, and presented estimates of possible responses to those incentives based on labour supply models developed in other Centre-funded research. Fran Bennett (Women’s Budget Group and University of Oxford) discussed the design of Universal Credit’s assessment, claims and payments process, while Stephen Brien (DWP) presented a government perspective. The event was well attended and received much media coverage, including a leading article in the Daily Mail.

3) Single tier pension

Centre researchers have been significantly involved in commentary on government proposals for a single-tier flat-rate pension. IFS researchers have met numerous times with Treasury officials and DWP, at their request, to discuss the implications of the proposed reforms. Researchers from IFS met with civil servants from DWP and the Pensions Minister, Steve Webb, while the Department was formulating the 2013 Pensions Bill, which proposed a radical reform to the UK state pension system. IFS researchers used their existing evidence base and expertise to challenge the Department’s draft proposals, and DWP civil servants provided input into ongoing IFS research related to the proposed pension reforms. We have submitted written evidence and gave oral

evidence to the Work and Pensions Select Committee in February 2013.

IFS researchers set out independent analysis of the impact of the single-tier pension in written and verbal evidence to the Parliamentary Work and Pensions Select Committee. Centre staff also published a full report on the implications of the bill. The Centre's independent analysis provided much-needed clarity for government officials, enabling them to give a more realistic picture of the winners and losers from the reform. The research also informed the wider public, as evidenced by attendees at the report's launch event, who included representatives from academia, the press, the charity sector and the private sector. The report has been downloaded over 17,000 times since its publication.

4) Developing data for social science research

Centre researchers have worked closely with other ESRC-funded researchers to push forward the use of administrative data in social research. In designing and analysing the English Longitudinal Study of Ageing (ELSA) we have pioneered the establishment of survey data linking to life-time earnings histories from the National Insurance records. Building on this, we have collaborated with the Institute of Education to help link three additional large cohort studies to data from HMRC and DWP. We also formed part of the successful bid to set up the Administrative Data Research Centre for England. Drawing on CPP researchers' expertise in fiscal policy, we will be collaborating with colleagues at four other institutions, bringing together high-level multidisciplinary expertise to ensure a wide range of administrative data can be safely and effectively used in research. Together with the Centre for Longitudinal Studies, we have also developed survey questions to measure quantitatively the key drivers of young people's education decisions. These include expected returns, risk and time preferences, and dislike of school. We have successfully piloted these questions and many of them now look highly likely to be included in the age-14 Millennium Cohort Study survey.

Centre Co-Director James Banks has acted as Chair of the Scientific Advisory Committee of the ESRC's Understanding Society study and was also appointed to its Governing Board. He also chairs the Expert Advisory Group on Data Access established jointly by ESRC, MRC, Cancer Research UK and the Wellcome Trust to provide strategic advice on the emerging scientific, legal and ethical issues surrounding data access for human genetics research and cohort studies. As well as advising interdisciplinary ageing studies in China, India, Brazil and the Republic of Ireland, he delivered the inaugural lecture on the importance of longitudinal and life-course data at the launch of the Centre for Longitudinal Studies established as a joint centre between the Economic and Social Research Institution and Trinity College Dublin.

Researchers at IFS have been amongst the first academic users of the Kantar Worldpanel, consumer data that is collected by market research firm TNS-Kantar (Dubois, P, R Griffith and A Nevo (2014) "Do Prices and Attributes Explain International Differences in Food Purchases?" *American Economic Review*, 104:3, 832-867; Leicester and Oldfield (2009) "Using Scanner Technology to Collect Expenditure Data" *Fiscal Studies*, 30:3/4, 309-337). These data provide the first opportunities for researchers in the UK to study the detailed purchasing

decisions of households over time (the data are longitudinal) and, because they contain precise information on product characteristics and prices, they allow us to study not only consumer demand but also the supply behaviour of firms. These data are now being made available around the world and open up rich new opportunities to better understand the way that consumers and firms behaviour in a number of important markets.

As mentioned above, researchers at the IFS have been heavily involved in the design of new surveys in developing countries, often in the context of the evaluation of certain interventions. Often, we have introduced new models and experimented with new and original measurement tools with the aim of measuring things such as expectations, risk perceptions, risk attitudes and beliefs.

Publications and outputs

Researchers working with the Centre (IFS research staff, Research Fellows, Research Associates, Scholars and Visiting Scholars) have published:

- 198 journal articles
- 168 working papers
- 156 briefing notes and reports, and 152 Observations aimed at the wider user community
- made over 800 presentations at academic conferences
- other outputs (detailed on our website)

Outcomes resulting from Centre research and next steps

Centre research has made important contributions in terms of scientific outputs and towards promoting and informing the design of effective and coherent public policy. We have deepened the evidence base on the impact that different interventions and changes in the economic environment have on the behaviour of individuals, families, firms and governments.

Our research has strengthened the platform of rigorous analysis, institutional understanding and up-to-date empirical evidence from which we are able to analyse and comment upon economic and policy developments as they happen. This research base is key to our ability to respond flexibly and authoritatively to the evolving policy debate, and is greatly valued by the many influential stakeholders we share with the ESRC. The ESRC Centre at IFS is recognised worldwide as the UK's leading independent centre for microeconomic research.

The main outputs of the Centre have been cutting-edge research findings, published in the top international journals and communicated in non-technical form to policymakers, the media, parliamentarians, civil society organisations, business and the general public. Going forward we will continue to work proactively to influence policy.

Our research has had a direct scientific impact through journal publications, high-profile conference presentations and special sessions. We have worked closely with a number of other ESRC investments at Essex (Understanding Society), UCL (Cohort Studies and CLOSER) and LSE (CEP), as well as with those analysing linked datasets (in research institutions and in government) in order to maximise the value of synergies between their work and ours. Internationally, we have worked with the NIA-funded ageing studies in the US, UK, Europe, China, India, Brazil, Chile, Japan and many other countries on various data collection initiatives. We have collaborated with international institutions (e.g. IADB and the World Bank) to ensure that the lessons learned in our data initiatives are used in a wide range of contexts.

CPP has an important academic impact through training and network activities. The Centre attracts and trains talented researchers and offers a stimulating working environment by maintaining an impressive global network of research fellows, associates and visitors. We have disseminated and promoted research findings through our networks and through collaborations with other ESRC investments (e.g. CEP and MISOC) and research groups at UCL (Epidemiology and Public Health), Manchester (Health Economics and Social Statistics) and Oxford (Economics).

We have used the media to inform the public, working intensively with journalists in print and broadcast media to deliver the key messages of our research. We have engaged extensively with political, business, education, social affairs and economics correspondents. Our website, public lectures and targeted events mean that we have engaged with students and the wider community, promoting the outcomes of our research.

Part 5: The Director's role and Centre management

A key objective of the Director's role at the Centre has been in **providing intellectual leadership** for the research programme. Together with the inputs from the co-directors, this has been a centrally important component in the success of the Centre for the Microeconomic Analysis of Public Policy at IFS. This leadership has been achieved by ensuring that research is conducted at the very highest level of rigour, that it is developed in a stimulating research environment and that the output of the research is published in the top international journals. While, at the same time, ensuring the research findings have the greatest possible practical impact. Examples of these have been the research on life-time inequalities and human capital production, detailed in the discussion of research activities and Centre outputs and impacts in section 4 of this report. In each case a coherent line of new leading-edge research has been developed over the course of the Centre involving early career and senior researchers. The work has been published in the very best academic journals and has also been used by Centre researchers at IFS to address key current public policy issues.

The research environment we have developed at the Centre is lively and intellectually demanding. It has brought together the best academics in the research areas of the Centre and allowed them to develop research projects with younger researchers at the Centre. The Director is not only involved in developing the research projects but also in making sure there is time for interactions across researchers and in encouraging external researchers to visit, give seminars and develop research ideas. The smooth running of interactions between all those involved in the Centre has been a key to success.

The job of the Director is to maintain a balance between leading-edge research and maintaining active regular interactions with policy makers and commentators. These go hand in hand with many of the major research ideas emanating from discussions over on-going policy issues. It is this two-way interactions between research and policy that places the ESRC Centre at IFS in a unique position.

The research programme has aligned well with the ESRC's Strategic Priorities and we have developed these over the course of the Centre through interactions between the Director and the ESRC through the Troika committee and with the Advisory Board, in particular taking key leadership in the development of robust government and private sector *strategies to ensure the sustainable growth of the UK economy*. Our work on the taxation of intellectual property is a prime example of this, and our work on tax reform and human capital investment another. Our research on the determinants of inequality and poverty and the role of government policy in these trends, has played a central part in the debate on *providing a vibrant and fair society*. The direct impact of the commentaries on the government's Spending Review each Autumn is a clear example of this, as is the Centre's 'Green Budget' publication outlining alternatives for the upcoming budget each year.

The Director's role has been to make sure that the Centre fulfils its objective to promote and inform the design of effective and coherent public policy, based on a detailed understanding of the impact that different interventions and changes in

the economic environment have on the behaviour of individuals, families, firms and governments. The research has taken CPP's research into important new areas, bringing new theory, new data and new econometric techniques to bear on our existing areas of expertise. Key analytical advances have been made generating better dynamic models of behaviour that take explicit account of uncertainty; deeper analysis of the role of market frictions in determining the ability of individuals to insure against risk; and an innovative approach to empirical measurement in both conventional and new dimensions of behaviour, facilitated by our close involvement in the design and analysis of detailed micro-level datasets.

Another key objective of the proposed research agenda is to strengthen the platform of rigorous analysis, institutional understanding and up-to-date empirical evidence from which to analyse and comment upon economic and policy developments as they happen. A good example of this has been our work on the *English Longitudinal Study of Ageing*, run jointly with UCL and Manchester. This study has been used to develop measures of health and cognition, which have turned out to be essential in our research on understanding retirement decisions, a key economic and policy development over the period of this award.

These achievements lined up very well with the definition and the implementation of the performance indicators agreed between the Director, the ESRC and the Strategic Research Board.

A central aim of Director throughout the life of the Centre has also been **providing a lead on engaging with potential users**. A key output of the Centre has been to take our cutting-edge research findings and communicate them in a non-technical form to policymakers, the media, parliamentarians, civil society organisations, business and the general public. This has meant the continual engagement with users of our research, especially users outside the research community, to ensure, as far as possible, that the research is meeting the needs of users and beneficiaries. There are many examples of this. We have provided a series of Public Economics lectures, and provided extensive briefings to journalists and policy-makers in advance of the Budget and the Spending Reviews. We have engaged in policy research with international organisations such as the IMF and World Bank. There are many more such examples given in Section 4 of this report.

The aim of the research has been to use the findings to help the UK and other countries - industrial and developing - succeed in the global economy. The research built on the track record of the ESRC Centre, which has played an indispensable role in establishing IFS as an institution recognised worldwide as the UK's leading independent centre for microeconomic research.

One of the important synergies between the Centre and IFS more broadly is to help the Director and other Centre researchers in their objective in **providing input to public policy debates**. This has happened very successfully during the life of the existing Centre as can be seen from the level of engagement with policymakers, the media, parliamentarians, civil society organisations, business and the general public. On many occasions these have also **provided input to ESRC policy debates**. Through interactions between the ESRC officials and Board and Council members we have also helped significantly in **providing a**

channel of communication for the ESRC with the research community to explain Council policies. The Director has also been responsible for producing reports required by the ESRC and for attending meetings or sending a nominated representative as required.

The Director has also worked very successfully with the excellent Advisory Board, chaired by Professor Alan Auerbach of Berkeley, which has received the Research Centre's annual reports and provided very effective feedback to the Research Centre. We have paid particular attention to gender balance, geographical distribution and user representation in determining Advisory Board membership. The Advisory Board has a mix of academic members and members from the policy and business community, including, for example, Sharon White, chief executive of Ofcom, William Morris, head of tax at GE and Sir Charles Bean from the Bank of England (now at LSE).

The Director also worked closely with Diane Coyle, the Nominated Board Member, and the ESRC Case officer through regular "troika" meetings that discussed the progress of the Research Centre. The Troika arrangements were ended in the last year of this Centre funding. It worth noting that we found it extremely useful to have a representative of the ESRC secretariat attending meetings of the Advisory Board.

Changes in the original research proposal have been few but where they have occurred they have been discussed fully with the Troika and Advisory Board members. There were two specific cases. The first occurred when one of the co-investigators, Professor Costas Meghir, moved to a Professorship at Yale University. Although he maintained a strong involvement with the research at CPP we did scale back the work on general equilibrium models in the human capital area. The second was the appointment of Professor Imran Rasul from UCL as a Co-Investigator, who brought with him a key expertise in the analysis of risky behaviours, especially among adolescents. Thus we have expanded our work on human capital and schooling choices to account for this new expertise.

In addition to our direct interactions with policymakers, as noted above we have provided advice and disseminated knowledge in a way that contributes, we believe, importantly to an informed public debate on key policy issues. We have provided regular briefings for parliamentarians, we interact frequently with businesspeople and civil society organisations, and we inform the general public both directly and via the media.

We have also placed considerable importance on promoting 'public understanding of the social sciences', with a particular focus on students thinking about careers. Again as mentioned above, we have talked about our policy research and current issues at conferences for A-level and undergraduate students. And we have promoted careers in social science at the annual open days organised by the Royal Economic Society and Government Economic Service at the Treasury.

The research agenda we have followed built on the existing strengths and outputs of the Centre, both by expanding the scope of our research into new areas and by exploiting new analytical approaches, new sources of empirical evidence and new methods for analysing data in existing areas. It has addressed key determinants of our ability to 'succeed in the global economy'. The projects

we have undertaken have provided advances in ‘high-quality basic, strategic and applied research’ as the list of outputs in Section 4 testifies.

The funding for the Centre has not merely been a subset of research at IFS; it has formed the intellectual and financial foundation for all IFS research. The Centre has been able to raise around £3 in co-funding for every £1 granted through the Centre to finance further research. The Director’s role in **managing the research** process has been to secure maximum value for money from the ESRC’s investment in the Research Centre. The co-funding raised through IFS based research projects has delivered excellent value-for-money even beyond the directly financed research. Key co-funding with Nuffield Foundation, with Rowntree and with the ERC, listed in the annual reports, are good examples of this.

The Director has determined work priorities within the Research Centre’s strategy and allocated those resources provided by the ESRC, within the procedures set out in this grant; managed the research, publication and dissemination, fund-raising and other work of the Research Centre; and undertaken his own research.

The Director has also ensured that the Research Centre played a full role in **the training of emerging researchers** both as postgraduate students and as contract researchers, following the recommendations of the Concordat on Contract Research Staff Career Management in promoting active personnel and career management of such researchers. The Director has been a member of the selection committee for all posts in the Research Centre and has also been involved in the selection of visiting academic staff and external participants in the research programme. The Director ensured the Research Centre pursued an active equal opportunities policy.

In terms of postgraduate training, the Centre provided funding for a number of PhD scholars, who work alongside the research teams and are supervised by senior Centre staff. This has proved a particularly successful capacity-building activity, allowing us to attract or keep some of the best PhD students to or in the UK. In turn, these students benefit both from formal university graduate training (usually at UCL) and from continuous interaction with IFS research staff who are engaged in policy-relevant research. The students thus learn from the very beginning the importance of academic rigour and proper motivation of research. PhD scholars go on to obtain prestigious academic jobs in the UK and abroad.

The Centre has also supported researchers at the Centre who did not yet have a postgraduate degree to carry out graduate research leading to the degree of MSc or PhD. Doctoral research projects typically dovetail with the Centre’s programme and are supervised by senior Centre staff. The result of these two approaches to PhD research is the training at the highest level of researchers in an environment with strong academic rigour and interaction with policy questions.

By providing a stable source of long-term support, Centre funding underpins a career structure that has trained high-quality social scientists to work both in academic research and in other fields. We hire three or four graduate recruits every year from 300 or so applicants. Our team-based approach to research gives them an opportunity to build their skills under careful supervision, while being

treated as co-authors rather than research assistants from the outset. In addition to learning technical skills, they have also helped and engaged productively with a wide variety of stakeholders.

At the launch of the Centre, the Director of CPP, together with the team of Co-Investigators, set out a mission which had three broad objectives: (i) to promote and support, by any means, high-quality basic, strategic and applied research and related postgraduate training in the social sciences; (ii) to advance knowledge and provide trained social scientists who meet the needs of users and beneficiaries, thereby contributing to the economic competitiveness of the United Kingdom, the effectiveness of public services and policy, and the quality of life; (iii) to provide advice on, and disseminate, knowledge; and promote public understanding of the social sciences. We believe the outputs from the Centre show strongly that the ESRC Research Centre for the Microeconomic Analysis of Public Policy at IFS has delivered substantially on all these elements of the mission.

There were some changes to the original funding envelope. During the lifetime of the Centre, the Wakeham 'efficiency savings' were implemented, resulting in a reduction in the cash available to support the Centre's research agenda. The net loss of income was substantial and, not surprisingly, presented serious challenges in the light of an extremely competitive research funding climate both nationally and internationally. However, the IFS was by and large successful in attracting additional funding from other (non-ESRC) sources to sustain the ongoing work of CPP.

The ESRC provided supplementary funding streams during the course of the Centre, to support new work. These included three-cross investment programmes: the economics of energy policy (undertaken jointly with the Centre for Climate Change Economics and Policy (CCCEP) at Leeds/LSE); Combining micro- and macroeconomic approaches to fiscal policy evaluation (with the Institute of Macroeconomics at UCL); and Understanding the education decisions of young people in the UK (with the Centre for Longitudinal Studies at UCL Institute of Education). The opportunity to work on joint projects with colleagues in other Centres deepened and extended existing links that CPP has forged over the years, and proved fruitful in a number of ways.

Other changes included funding under the Co-Investment pilot programme to support work on annuitisation (co-funded with NAPF); and two tranches of funds for work in the run up to the referendum on Scottish independence reviewing fiscal options and constraints. Both these latter projects have contributed to the development of substantial programmes of ongoing research at CPP.

Part 6: Reflections on the centre and the Director's role

The organisation and management of research of the Centre for the Microeconomic Analysis of Public Policy at IFS has been a key component to the successful outcome of the Centre both in its academic prowess and in its influence in the public policy debate. The Director has necessarily played a central role in this. The Director has determined work priorities within the Research Centre's strategy and allocated those resources provided by the ESRC, within the procedures set out in this grant. He has taken overall responsibility to manage the research, publication and dissemination, fund-raising and other work of the Research Centre; and undertaken his own research. These allocations and other duties have been achieved through a very smooth process. This could not have been done by the Director working on his (or her) own. It relied very heavily on the efficient organisation of research and research projects at IFS and also on the calibre of the researchers at the Centre.

A key role for the Director has been to maintain a balance between leading-edge research and active regular interactions with policy makers. With so many demands to produce top level academic research and to be engaged with the policy debate this is one of the most difficult aspects of running the Research Centre. What makes it easier is that the academic research and policy engagement in our agenda go hand in hand. Many of the major research ideas have emanated from discussions over on-going policy issues. Likewise, it would be hard, if not impossible, to engage accurately and in a timely fashion in the policy debate if it were not for the long-term investments in academic expertise. It is this two-way interactions between research and policy that places the ESRC Centre at IFS in a unique position.

Moving on to the development of the research at the Centre, throughout the duration of the Centre, regular research meetings involving junior researchers, research fellows and the director have been held to develop on the ideas put forward in the original proposal. These ideas were then further discussed with the ESRC through the Troika meetings and in the forward look of each of the Annual Reports. They were also discussed extensively with the Advisory Board and preliminary findings were presented at each of the Advisory Board meetings. One of the many highlights of being Director has been working with the excellent Advisory Board, chaired by Professor Alan Auerbach of Berkeley, which has received the Research Centre's annual reports and provided very effective feedback to the Research Centre.

Discussions with other stakeholders were also often key in the development of research. The Director has to take a lead on this, in particular by establishing and maintaining links with government departments and policy institutions such as the IMF. Continuing this process of engagement throughout the life of ESRC Centre research projects was a major part of the Director's role.

Overall these interactions have been extremely worthwhile and successful, made easier by the collective help of IFS researchers and administrators. This way the Director has been able to make sure that the Centre fulfils its objective to promote and inform the design of effective and coherent public policy. The research programme has aligned well with the ESRC's Strategic Priorities and we

have developed these over the course of the Centre through interactions between the Director and the ESRC through the Troika committee and with the Advisory Board.

The research has taken CPP's research into important new areas, bringing new theory, new data and new econometric techniques to bear on our existing areas of expertise. Key analytical advances have been made generating better dynamic models of behaviour that take explicit account of uncertainty; deeper analysis of the role of market frictions in determining the ability of individuals to insure against risk; and an innovative approach to empirical measurement in both conventional and new dimensions of behaviour, facilitated by our close involvement in the design and analysis of detailed micro-level datasets. These achievements have lined up very well with the definition and the implementation of the performance indicators agreed between the Director, the ESRC and the Strategic Research Board.

Changes in the original research proposal have been few but where they have occurred they have been discussed fully with the Troika and Advisory Board members. There were two specific cases. The first occurred when one of the co-investigators, Professor Costas Meghir, moved to a Professorship at Yale University. Although he maintained a strong involvement with the research at CPP we did scale back the work on general equilibrium models in the human capital area. His replacement was Professor Imran Rasul from UCL, who brought in an expertise in the analysis of risky behaviours, especially among adolescents. Thus we have expanded our work on human capital and schooling choices to account for this new expertise.

The Director's role in capacity building has been another key aspect to report. The Director has been a member of the selection committee for all posts in the Research Centre and has also been involved in the selection of visiting academic staff and external participants in the research programme. The team-based approach to research has given younger centre researchers an opportunity to build their skills under careful supervision, while being treated as co-authors rather than research assistants from the outset. In addition to learning technical skills, they have also helped and engaged productively with a wide variety of stakeholders.

In terms of postgraduate training, the Centre provided funding for a number of PhD scholars, who work alongside the research teams and are supervised by senior Centre staff. This has proved a particularly successful capacity-building activity, allowing us to attract or keep some of the best PhD students to or in the UK. In turn, these students benefit both from formal university graduate training (usually at UCL) and from continuous interaction with IFS research staff who are engaged in policy-relevant research. The students thus learn from the very beginning the importance of academic rigour and proper motivation of research. PhD scholars go on to obtain prestigious academic jobs in the UK and abroad.

By providing a stable source of long-term support, Centre funding underpins a career structure that has trained high-quality social scientists to work both in academic research and in other fields. We have hired 3 or 4 graduate recruits every year from 300 or so applicants.

Taken together the Director of CPP, together with the team of Co-Investigators, has had to deliver the Centre mission agreed with the ESRC. This had three broad objectives: (i) to promote and support, by any means, high-quality basic, strategic and applied research and related postgraduate training in the social sciences; (ii) to advance knowledge and provide trained social scientists who meet the needs of users and beneficiaries, thereby contributing to the economic competitiveness of the United Kingdom, the effectiveness of public services and policy, and the quality of life; (iii) to provide advice on, and disseminate, knowledge; and promote public understanding of the social sciences.

By providing a stable source of long-term support, Centre funding has allowed the Director to deal with new policy environments and new research developments in a way that has enhanced the research agenda. The funding has underpinned a career structure that has trained high-quality social scientists to work both in academic research and in other fields. Together this has made the task of Director exciting and demanding. We believe the outputs from the Centre show convincingly that the ESRC Research Centre for the Microeconomic Analysis of Public Policy at IFS has delivered substantially on all these elements of the mission.

Part 7: Forward look

The CPP will continue to use and build upon its expertise developed under this grant to apply leading edge economics and econometrics to problems of scientific and policy interest. We will continue to develop new econometric techniques, to help develop new data availability, including linked survey and administrative data, to push our research agenda in exciting new directions. This work will be helped by a new grant from the ESRC to fund future new work at CPP, and also by the co-funding that we plan to raise.

The overarching objectives of the Centre will continue to be to:

- make major scientific progress in understanding how individuals and firms behave and how they react to government policy;
- have substantial impact on policy in the fields of taxation, labour market, education, welfare, pensions, and public finances;
- build technical and policy capacity in a new generation of highly-skilled researchers.

The focus of the work will be on:

Consumers and markets. We will use insights from behavioural economics and robust methods to understand within-household behaviour and we will explore the relationships between government policy, firm behaviour and outcomes for consumers. This work has the potential to transform our understanding of the effects of policy interventions that either change the relative prices of the goods consumers buy (e.g. taxes on alcohol, green levies, sugar taxes) or try to change consumers' preferences (e.g. through information campaigns or restrictions on advertising).

Inequality, risk and insurance. Understanding the determinants of inequality is central to our agenda. We will focus on understanding inequality across the life cycle and across and within generations. We will explore the role of housing, of insurance and of market and non-market mechanisms in managing risk and uncertainty. As just one example of the progress we expect to make, the availability of new administrative data linked to existing surveys will allow us to examine the dynamics of inequality and the impact of alternative policies. In particular, we will focus on the role of wealth and bequests in generating within-cohort inequality among the younger generations and we will investigate how uncertainty is resolved over the life cycle and the way this affects how much insurance taxes and benefits provide at different ages.

Public finances and taxation. Focusing on high earners and multinational companies, we will use newly-available data to throw new light on risks to the public finances in the UK from these vital but increasingly risky sources of revenue. We will also develop a programme of work that focuses on the particular issues facing tax design in middle-income countries.

Evolution of human capital over the life cycle. We aim to make major strides in understanding the process of formation of human capital from the early years to young adulthood, how human capital is rewarded in the labour market, how it

is linked to labour supply and productivity, and how the evolution of health and well-being interacts with labour supply and other outcomes in later years.

These issues are intricately related and we envisage a joined-up programme of work that will provide new answers to some of the most important questions currently facing policymakers. How do people make decisions over savings, nutrition, education and labour supply and how can government influence those decisions? What is driving increased levels of income inequality and how might interventions in education and through the tax and welfare system ameliorate them, and at what cost? How should governments respond to the pressures on corporate and individual tax revenues created by increasing globalisation? What drives decisions over pension savings, health behaviours and retirement decisions and how should governments design policy in the face of an ageing population?

In answering these questions, we will make use of the unique expertise and data resources brought together at the Centre. Crucially, our intention is also to take a consistent approach in which we will model the determinants of individual decisions over the life course and the interactions between economic actors; we will model behavioural 'biases' and market frictions; we will use a combination of available data, randomised controlled trials and structural modelling to understand not just the effect of policies but also what drives that effect and hence what might be the effect of other policies; and we will develop new data and measurement tools.

Our research programme will achieve impact across a range of users including: **policymakers**, we will work proactively to influence policy; the **academic community**, our research will have a direct scientific impact through journal publications, high-profile conference presentations and special sessions; **media and the general public**, we will use the media to inform the public, working intensively with journalists in print and broadcast media to deliver the key messages of our research. We will engage with political, business, education, social affairs and economics correspondents. Our website, public lectures and targeted events engage with students and the wider community, promoting the outcomes of our research.

Capacity building: We are committed to ensuring that the impact achieved through our research is sustainable in the long term and can be taken forward by the next generation of researchers. A central objective is therefore to provide an environment where excellent young researchers can develop their scientific, communication and policy skills. We aim to recruit and retain the best young economists and to provide an environment where they will benefit from the extensive network of experienced Centre staff and Research Fellows, data-access infrastructure, and policy and media connections. We will support these early career researchers through postgraduate qualifications where relevant, train them in all aspects of the research dissemination process and expose them to high-profile meetings and conference presentations from the outset. We will also host a number of PhD students who will develop the skills required to undertake high-quality impactful work.