



 UNIVERSITY OF
CAMBRIDGE



Centre for Business Research

CBR ANNUAL REPORT

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CBR, Top Floor, Judge Business School Building, Trumpington Street, Cambridge CB2 1AG

Foreword

The CBR annual report for 2009-10 displays the continued vigour of the CBR's research programmes. The Corporate Governance programme continues to generate research outputs of the highest quality and to leverage external support to augment research council funding. The ESRC funded project on 'Law, Finance and Development' attracted substantial supplementary funding from the Newton Trust, the Japanese Ministry of Education and the Oxford-Man Institute of Quantitative Finance as well as Doshisha University. It was moreover awarded an 'outstanding' grade in the ESRC evaluation of its activities. Researchers associated with the project were awarded for the second year running the European Corporate Governance Institute Prize (from 2010 onwards, renamed the Allen & Overy Law Prize). In the Enterprise & Innovation programme, major new projects have come on stream in relation to the financing and growth of small high technology business, and in our rapidly expanding work on the role of universities in the commercialisation of science. Here too, an ESRC-funded research project, this time on University-Industry links, was given an 'outstanding' evaluation.

Projects from both the Enterprise & Innovation and Corporate Governance programmes combined outstanding research achievements with significant policy and research impacts both in the UK and abroad. Our reputation in this area is reflected in the award of £3 million ESRC, TSB, NESTA and BIS funding for the new 5-year research and dissemination programme of the UK~ Innovation Research Centre (UK~IRC). This new centre, a joint venture with Imperial College, is a significant addition to the Enterprise & Innovation programme.

This Annual Report is the last which covers the activities of the CBR as an interdisciplinary institute in the University of Cambridge independent of any Faculty or School. With the strong support of the CBR's Management Committee and Advisory Board, the Director of the Judge Business School, Professor Arnoud De Meyer, the Chairman of the School of Technology, Professor Howard Chase, and the Pro Vice Chancellor for Planning & Resources, Professor Steve Young, it has been agreed that from August 2010 the CBR will become an interdisciplinary institute within the Judge Business School. This association with the Judge Business School means that the CBR also then comes under the umbrella of the School of Technology of the University. The CBR will continue to have a reporting responsibility through its Committee of Management, representing the various faculties whose staff collaborate in our interdisciplinary research programmes. It will also maintain its current internal management structures and its Advisory Board. These changes mark a significant step forward in the integration of the CBR into the University's financial allocation structures. This will strengthen our financial capacity going forward and enhance our ability to play the significant interdisciplinary research role in the University which the CBR has done since its inception in 1994.

I would like to record my congratulations to all of the individuals involved in the research and administration activities of the CBR for the achievements which are reflected in this report. I would also like to record my personal thanks to Simon Deakin and Andy Cosh, Assistant Directors of the CBR, to the members of the Advisory Board and to Professor De Meyer, Professor Chase and Professor Steve Young as Pro-Vice Chancellor for Planning and Resources for their support and advice in the development of the new constitutional and financial arrangements underpinning the research activities of the CBR.

Alan Hughes

Director, CBR

October 2010

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1. General Overview, Research and Dissemination Highlights

Introduction

The CBR was established as a research centre within the University of Cambridge in October 1994. It is currently housed on the sixth floor of the Judge Business School Building. The CBR is an interdisciplinary centre and draws upon researchers from the Judge Business School; the Faculties of Economics, Law, and Social and Political Sciences; the Departments of Geography and Land Economy; and the Departments of Engineering and Physics.

The CBR has a Director, Alan Hughes, and two Assistant Directors, Andy Cosh and Simon Deakin. In the course of 2009-10 it employed 16 research staff (9 FTEs) and 7 administrative and secretarial staff (4.25 FTEs). A network of over 30 additional researchers are linked to the CBR's work as Research Associates, taking part in projects in various capacities, including in some cases as principal investigators.

This report covers the activities of the CBR from the beginning of August 2009 to the end of July 2010.

The Scientific Programme

The contract between the ESRC and the University of Cambridge under which the CBR was established specified the following aims and objectives to be met by the Scientific Programme of the CBR:

Major advances are expected in these areas:

- a) the analysis of the interrelationships between management strategy, takeovers and business performance in an international competitive context;*
- b) the analysis of the relationship between corporate governance structures, incentives systems, business performance and the regulatory and legal environment;*
- c) the analysis of policy, entrepreneurial styles, innovation, finance, training and international activity and networking and cooperative activity in relation to the survival, growth and development of small and medium-sized firms.*

It is also expected that in making these advances, the CBR will make a significant contribution to the construction and analysis of large and complex datasets including survey and panel data.

In order to achieve the objectives set out above, the CBR will be expected to carry out the following actions:

- d) conduct an interdisciplinary research programme in Business Research;*
- e) construct and maintain survey and related databases necessary for the conduct of Business Research;*
- f) mount a series of workshops and seminars in Business Research;*
 - produce and distribute a Working Paper Series to disseminate the results of the Centre's research programme;*
 - maintain contact with researchers in the UK and abroad in cognate areas of research, and with potential users of the output of the Centre's research, in designing and executing the Centre's programme of research.*

It was also expected that, in making these advances, the CBR would make significant contributions to the following areas: a) economics, b) human geography, c) management and business studies, and d) socio-legal studies.

In its final report as an ESRC-designated research centre (*Report on Activities 2002-4*), the Centre set out how it had achieved these objectives in the three years prior to the ending of core funding in December 2004. These objectives remained broadly relevant going forward. However, following the ending of core funding, the Centre's management structure was reorganized to reflect a new focus on the twin themes of *Enterprise and Innovation* and *Corporate Governance*. These now correspond to the Centre's two research programmes.

In 2009 the CBR and the Entrepreneurship and Innovation group at Imperial College London successfully bid for funds to establish a new UK Innovation Research Centre (UK~IRC) of which Hughes is the Director. The research activities of the UK~IRC are presented within the Enterprise and Innovation programme section of the CBR Annual Report.

Management structure

With effect from January 2005 a new programme structure was put in place. It consists of two programmes of interdisciplinary research. The first, led by Andy Cosh, focuses on *Enterprise and Innovation*, the second, led by Simon Deakin, focuses on *Corporate Governance*. These programmes are supported by the Survey and Database Unit (led by Cosh) which provides expertise for survey based work and is responsible for the highly regarded biennial surveys of the UK small business sector, and the Policy Evaluation Unit (led by Cosh and Hughes) which specialises in evidence based policy evaluation linked to the core research programmes.

The Survey and Database Unit provides the CBR with a unique in-house integrated approach to the design and interpretation of complex large scale surveys in both the Corporate Governance and Enterprise & Innovation programmes. It has been associated with many of the CBR's most distinctive contributions in terms of SME growth; innovation and financing; the international comparisons of innovation activity; and most recently the largest survey in the world to date covering the knowledge exchange activities of over 22,000 UK academics in all disciplines and UK Higher Education Institutions.

Research achievements and results in the reporting period

In the course of the period 2009-10:

- CBR research was disseminated in 3 books, 30 refereed journal articles, 15 chapters in books, and 57 other significant publications including the CBR's own edited working paper series.
- CBR work appeared or was accepted for publication in core journals in economics, management, law, political science and geography.
- CBR researchers made over 78 conference and workshop presentations worldwide.
- Research Fellows leaving the CBR went on to a number of significant positions in other universities and in professional practice.

Full details of research findings, with summaries of progress made on research and outputs, are contained in the individual project reports, in section 2, below.

Dissemination of research findings

In addition to publishing in academically-recognised outlets, the Centre seeks to disseminate its findings more generally with a view to maximising their potential economic and social impact. Recent cases of dissemination beyond the academic community include the following.

Corporate governance and board-level practice in Nigeria

Simon Deakin gave a keynote address on 'Corporate governance, development and growth' to a conference on *Good Governance and Regulation Leadership Forum*, organized by Central Bank of Nigeria and the Nigerian Securities and Exchange Commission in Abuja in May 2010. The conference brought together executive and non-executive directors from leading Nigerian listed companies with a number of corporate governance experts and officials of the Commonwealth Business Council.

Takeover regulation and board structure in Japan

Simon Deakin and John Buchanan gave presentations on UK and Japanese takeover regulation and corporate governance practice to a workshop organized by Waseda University in Tokyo in January 2010. The background to the workshop was the consideration of proposals for the reform of the law governing takeovers and board structure in Japan. It was attended by civil servants and policy makers as well as leading academics.

Innovation Policy in the UK, Europe and the OECD

Alan Hughes and Michael Kitson were invited to present the findings of their ESRC funded research on the 'Role of Higher Education Institutions in Knowledge Exchange between the Private, Public and Third Sectors' to the Higher Education Funding Council for England; Research Councils UK; and senior policy bodies in Wales, Scotland and Northern Ireland. They also made a presentation to the OECD Innovation Policy Task Force. They held a Chatham House Rule workshop on Clusters and Innovation Policy for the Rt Hon David Willetts, MP, Minister of State for Universities and Science.

Hughes was asked to present findings on innovation policy, and made presentations to various meetings chaired by the then Prime Minister (Mr Gordon Brown); the Chief Scientific Adviser to the UK Government; Mr Vince Cable, the Secretary of State for Business, Innovation and Skills; and the Minister of State for Universities and Science, Mr. David Willetts. He also provided similar evidence-based policy presentations to the Director General for Innovation at BIS, and to the Director of Impact Assessment at BIS. Hughes also provided advice to the Danish Innovation Policy Task Force and was invited to advise the Technology Strategy Board on assessing the impact of their innovation policies programmes.

Bill Martin was invited to present the results of his research on Rebalancing the UK Economy to a Cabinet Office /Treasury seminar on Macroeconomic policy in the recovery.

The quality of CBR research outputs

The CBR aims to publish articles on a regular basis in leading or core journals in each of the disciplinary areas in which it carries out research (economics, innovation studies, geography, law, management, accounting, political science and sociology). Because of the uneven flow of research findings, it will not necessarily be possible to produce a large number of outputs in core journals in every year. Our aim is to achieve a substantial number of high-quality outputs over the normal life of a project.

The Centre recognises that not all research outputs will be ideally suited to publication in article form. Thus outputs in the forms of books, book chapters, and governmental reports are also encouraged. The CBR also produces a Special Publications series focusing on evidence based policy reports and the outputs of public,

commissioned evaluation reports. We aim to produce a balanced flow of research outputs of various kinds over the project life cycle.

The CBR does not make a REF submission in its own right. CBR outputs are credited to the university departments of the PIs and researchers concerned. In this way the Centre makes a direct contribution to the RAE/REF entries of departments within Cambridge and at other universities (as CBR-based researchers often go on to find employment elsewhere).

Since the start of the current REF cycle in 2008, CBR research has appeared, or is forthcoming, in the following journals which are among the most highly ranked in their disciplinary fields:

Discipline	Journal
Economics and Innovation Studies	Economic Journal; Economics Letters; Journal of Institutional and Theoretical Economics; Research Policy; The Journal of Technology Transfer
Law	Journal of Empirical Legal Studies; Law and Society Review; American Journal of Comparative Law; Modern Law Review; Journal of Law and Society
Management and Accounting	Accounting, Organizations and Society; Industrial and Corporate Change; British Journal of Industrial Relations; Socio-Economic Review
Political Science	Comparative Political Studies; Political Quarterly
Geography	Journal of Economic Geography

The CBR also seeks to make a significant contribution to raising the national and international profile of social science research. International and national recognition for the quality of CBR work has come in various forms. Recent highlights include:

- the award to CBR researchers in both 2009 and 2010 of the European Corporate Governance Institute prize (from 2010 known as the Allen & Overy prize) for research in law-related aspects of corporate governance (see http://www.ecgi.org/wp/wp_prizes.php).
- reappointment of Hughes to membership of the Prime Minister's Council for Science and Technology, the UK's senior advisory body in this area.
- invitation to Hughes to give keynote plenary lectures at the DRUID International Conference in Copenhagen and the Annual International Conference on Entrepreneurship and Innovation at Tsinghua University, Beijing.
- founding of UK~IRC after a national competition as a new centre of excellence in evidence based policy and identification by ESRC in 2010 of UK~IRC as its core strategic investment in this area.

The economic and social impact of CBR research

In 2007 the conclusions of a review by the ESRC of the CBR's impact on policy users were published.¹ This evaluation identified 'significant policy and practice impacts generated by the ESRC Centre for Business Research (CBR). These included, among others, contributions to the Law Reform Commission's deliberations on and codification of Director's Duties (for more effective corporate governance) and evidence of the positive effects of Government's new insolvency (personal bankruptcy) laws.....the most outstanding impact was found in two areas of CBR's research. This was the Centre's sterling work in labour and employment relations and the collection of data on Small and Medium sized enterprises (SMEs).'

Recent cases of policy and practice impact include the following:

The impact on policy of new methods for evaluating and measuring legal and regulatory change in corporate governance, financial markets and labour markets

As part of the ESRC-funded project on 'Law, Finance and Development', CBR researchers have been involved in developing new 'leximetric' methods for measuring and evaluating legal change over time in areas which include corporate governance law, insolvency law, and employment law. The datasets developed by the CBR team as part of this project have been the focus of interest from a number of international organisations. In the course of 2010 Simon Deakin was commissioned by the DIALOGUE section of the International Labour Office to write a report on labour law and development drawing in part on the CBR datasets. In addition, in March 2010 he gave a presentation on the CBR datasets to a roundtable on Measuring Law in Washington DC at which representatives from the World Bank, IMF, EBRD and a number of other international financial institutions were present.

The role of intermediate research organisations in the commercialisation of science

The work of Andrea Mina, David Connell and Alan Hughes on Intermediate Research Organisations carried out as part of the IKC Commercialisation Lab project was widely quoted in the Hauser Review on the role of such bodies in relation to the commercialisation of science. The recommendations of their work were incorporated directly into the report. The policy recommendations in the Hauser Report are under active consideration by the current UK government.

The role of 'soft companies' in innovation policy

David Connell and Jocelyn Probert's work on Innovation Policy and the Role of 'Soft' Companies was presented in a variety of UK and EU policy fora. This has led along with Connell's earlier CBR work on public procurement to the establishment of pilot programmes of procurement for R&D at the Technology Strategy Board as well as the introduction of a regional scheme by EEDA. In both of these developments Connell has been directly involved as an adviser and designer of the schemes.

¹ Jordi Molas-Gallart and Puay Tang, *Policy and Practice Impacts of ESRC Funded Research: Case Study of the ESRC Centre for Business Research* Report prepared for the Communications and Information Directorate Economic and Social Research Council (March 2007).

'Third-stream' funding of research and innovation

The research for HEFCE on Third Stream funding by Hughes, Ulrichsen and Moore has led to the simultaneous publication by HEFCE and CBR of several reports which have been fed directly into UK senior policy discussions at BIS and HEFCE.

Contribution to training and development of research capacity

Ph.D. projects

The CBR does not admit Ph.D. students directly, but several CBR members supervise Ph.D. projects which have a close connection to CBR research. Ajit Singh and Simon Deakin have recently supervised several students on themes related to the work of the ESRC-funded 'Law, Finance and Development' project. In the past year, theses on work related to this project have been completed on econometric analysis of Indian exports, law and microfinance in Bangladesh and Peru, and the role of law in Russia's economic transition. Michael Kitson has supervised Ph.D. topics on regional aspects of growth and entrepreneurship which are relevant to the work of the Enterprise and Innovation programme. Michael Pollitt has supervised work on the economics of energy demand which is linked to research on social capital carried out within the Corporate Governance programme.

Destinations of post-doctoral researchers

Large numbers of post-doctoral researchers working on CBR projects have gone on to take up tenure-track lectureships or senior research positions at leading universities in the UK and overseas (see the Centre's *Report on Activities 2002-4* for details of destinations up to end of the period of ESRC core funding). In the past year, Dominic Chai took up a lectureship at Manchester Business School; Aristeia Koukiadaki took up a Leverhulme Research Fellowship at Warwick Business School; and Niall McKenzie took up a senior research fellowship in Innovation at the Global Academy, University of Wales.

2. Project reports

The numbers in the tables indicate the location of the specific publications or activity as listed in Section 3 below

Programme 1: Enterprise and Innovation

Programme Director: Andy Cosh

Amongst the principal objectives of this programme are the analysis of the innovative performance, financial and management characteristics, and the location of business; and the design and evaluation of policies towards the SME sector. This analysis has involved close interdisciplinary collaboration between CBR researchers in economics, geography and sociology, and, in the case of the analysis of supply chain relationships, with lawyers in the projects carried on under the Corporate Governance programme.

This programme has established an international reputation among policy makers, practitioners and researchers as an authoritative source of analysis, information and evaluation of firm finance, innovation, growth and survival. Particular emphasis has been placed on analyzing the impact of enterprise policy. Methodological advances have been made in the measurement and analysis of firm growth and

performance, and in policy evaluation, and these have been incorporated into national and international data collection processes and policy development. An international and comparative dimension has been present throughout the life of the programme and this has been strengthened through numerous collaborations with other leading research groups. An example of this collaboration was the establishment of the UK Innovation Research Centre as a joint venture with Imperial College. The research projects carried out by the CBR within this Centre are reported below.

The current projects in the programme have a strong emphasis on innovation. A major survey of the extent and effectiveness of the exchange of knowledge between business and universities has been completed (Project 1.1 below). It shows that the linkages are very widespread and go far beyond technology transfer and involve many forms of knowledge exchange and collaboration. Another project examines these issues from the viewpoint of the firm by examining open innovation practices within UK firms (Project 1.7 below). The policy implications of this work are taken further by a project that examines the principal channels through which the insights derived from such evidence influences public policy (Project 1.8).

Another project examines services innovation and its impact on performance (Project 1.6). It focuses on knowledge-intensive business services which have had a major, and growing, impact on the economy in recent decades. The project examines how this impact has come about and whether it is sustainable. The initial work in this area has concerned examining the structural balance of the economy and the potential consequences of the recent recession.

Work in the financing of business has been a central focus of the programme over the past twenty years. This report describes a range of current projects concerned with the financing of innovation and new technology start-ups (Projects 1.2, 1.3, 1.4 and 1.5 below). They each examine the difficulties facing businesses in their attempt to commercialise scientific advances and evaluate why some are more successful than others in overcoming the problems of technological and market uncertainty. Important implications are identified for business, finance providers and government.

The research of the programme is intimately associated with the work of the Policy Evaluation Unit and the Survey and Database Unit, which is reported separately below. The Policy Evaluation Unit has completed major projects in relation to the evaluation of university-industry links in England and competitiveness policy for Northern Ireland. The Survey and Database Unit has designed and conducted a variety of large scale surveys underpinning the work of both the Enterprise and Innovation and the Corporate Governance programmes.

1.1 University-Industry Knowledge Exchange: Demand Pull, Supply Push and the Public Space Role of Higher Education Institutions in the UK Regions

Project Leaders: Alan Hughes, Michael Kitson.

Other Principal Investigators: Maria Abreu, Vadim Grinevich, Philip Ternouth (Council for Industry and Higher Education)

Funding: ESRC

Period: 2007-2009

Aims and objectives

The objective of this research is to identify the factors that affect the incidence, form, effectiveness and regional impact of knowledge exchange activities between the business and higher education sectors in the

UK. It will identify the way these interactions vary across UK regions and within those regions. Knowledge exchange includes the full range of ways in which the business community and the higher education sector interact and which may affect business and regional economic development. These interactions include educational and training activities, research publications and patenting, conferences, contracting and consulting activity, internships, joint research and development and licensing and new business formation.

Progress

The objective of this research was to identify the factors that affect the incidence, form, effectiveness and regional impact of knowledge exchange activities between the business and higher education sectors in the UK. It identified the way these interactions vary across UK regions and within those regions. Knowledge exchange includes the full range of ways in which the business community and the higher education sector interact and which may affect business and regional economic development. These interactions include educational and training activities, research publications and patenting, conferences, contracting and consulting activity, internships, joint research and development and licensing and new business formation.

The first stage of the research, based on the results of semi-structured interviews with over 30 UK businesses, showed that technology transfer is only one aspect of the knowledge exchange process; the very notion of exchange highlights the interdependent and evolutionary nature of interactions with others and particularly those in business. The research stressed that some of the greatest challenges in broadening the knowledge exchange policy agenda concern absorbing and embedding knowledge across businesses.

The second stage of the project involved the conduct of two large-scale UK-wide surveys, one of 2,500 businesses and one with an achieved sample of over 22,000 UK-based academics. The findings indicate that, although there is significant interaction between the science base and business sector, there is also significant 'hidden' knowledge exchange from a range of other academic disciplines - and it is not just about 'technology transfer' but a broader process that its best encapsulated as 'knowledge exchange'. Also interactions are not confined to the private sector – the public and third sectors are important as well: for instance, more than 75% of academics in health sciences collaborate with the public sector and nearly 60% collaborate or engage with the third sector. Very few academics are involved with creating spin-outs, licenses or patents, instead the most frequent forms of knowledge exchange involve informal advice, joint publications, consultancy and a wide range of people based activities (such as involvement in networks and employee training).

The third stage of the project involved 24 case studies of firms that have interacted with academics selected from the respondents to the Business Survey. The cases were selected to provide range of views on whether university-business interactions had resulted in significant impacts on their firms activities. Controlling factors when selecting the sample were the sector of the firm, the size of the firm, and the scale of knowledge exchange activity undertaken by the universities with which that firm interacts.

A report of the survey findings of academics was launched at a conference at NESTA in October 2009. Results have been presented to a wide range of academic public policy and events practitioner including RCUK, BIS, CST, The DRUID conference and the Scottish and Welsh devolved administrations.

Outputs for University-Industry Knowledge Exchange: Demand Pull, Supply Push and the Public Space Role of Higher Education Institutions in the UK Regions			
Articles	9 19 20 273	Chapters in Books	62
Conferences & Workshops presentations	155 156 157 158 161 162 163 164 165 166 167 168 169 170 171 172 173 174	Conferences & Workshops attended	219 220 221 222 223 224 225 226 227 228 229 230 239 240 241 242 243 244 245 246
Datasets	284 285	Media Coverage	266 267 268 269 270 271 272 273 275

1.2 The Role of 'Soft' Companies and Government R&D Contracts in the Development of SMEs

Project leaders: David Connell, Alan Hughes

Other Principal Investigator: Jocelyn Probert

Funding: EEDA and Newton Trust

Period: 2007-2009

Aims and Objectives

This research was designed to provide the East of England Science and Industry Council with a detailed analysis of the role of 'soft' companies and customer-funded R&D contracts in the region, and to identify policy actions which East of England Development Agency (EEDA) might take to support these firms and foster economic development. Policy thinking on innovation and exploitation of the UK science base by young technology firms has been dominated by the needs of early stage, venture capital backed companies that are established to convert new technologies into proprietary products and IP which they then sell or license. We argue that another kind of R&D based business – the 'soft' company model – has been largely unrecognised, although such firms are responsible for the initial phases of many, and possibly even the majority, of the UK's most successful science and technology companies. Soft companies are companies whose funding and revenues come mainly from carrying out 'bespoke' R&D projects for customers, or which go through a 'soft' phase of development before hardening into standard product. This provides a means of exploiting a range of potential applications of their technology prior to focusing on the best opportunities, as well as a funding mechanism. The term 'soft' therefore is used to signal the much greater flexibility and wider choice of early customers for these firms, compared with the rather fixed strategy of 'hard' companies.

Progress

With the completion of data gathering in early 2009, work on this project in 2009-10 has focused on dissemination. The final report for EEDA's Science and Industry Council appeared in professionally published form in February 2010 under the title *Exploding the Myths of UK Innovation Policy: How 'Soft Companies' and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy*. It has been disseminated to a range of policy makers, business leaders and academics in the UK and has attracted favourable comments from a range of sources in government and industry. The enterprise community in

Cambridge has expressed wide support for the report's findings. The report was covered extensively in the Financial Times and one to one briefing meetings have been held with Adam Afriyie MP, Vicky Ford MEP, and Graham Spittle and Iain Gray, Chief Executive and Chairman respectively of the Technology Strategy Board.

The work fed into a NESTA Provocation essay (no.13) written by David Connell and published in March 2010, entitled *Scientists are Customers too: How the SBRI can help Research Councils Drive Economic Growth*, with a Foreword by Professor Iain Leslie, previously Pro-Vice Chancellor for Research at the University. It also informs the work by the Cambridge team on the FP7 FINNOV project into ways of financing business experimentation, in which co-author Jocelyn Probert is participating.

David Connell recently presented proposals for an EU SBRI programme, outlined in the report, together with the report's analysis and conclusions, at an European Commission Workshop in Brussels in October 2009 and subsequently at two private meetings in Strasbourg in May with the EU Commissioners for Research and Innovation (Máire Geoghegan-Quinn) and Enterprise and Industry (Antonio Tajani) that were arranged by MEP Michael Harbour.

Academically the research was presented by Jocelyn Probert in November 2009 to an audience of university researchers and business people at the University of Adelaide and by David Connell at events organised by the UK~IRC. It also formed the core of papers given by David Connell at the Cambridge University Institute for Manufacturing Annual Technology Management Conference in September 2009 a conference on the Knowledge Economy held in Cambridge in June 2010 and organised by the UK-Innovation Research Centre (UK-IRC) in collaboration with the Cambridge Journal of Economics.

Future outputs will include contributions to the CBR working paper series on business models and on innovation by technology consultancies as a form of knowledge intensive business service.

Outputs for The Role of 'Soft' Companies and Government R&D Contracts in the Development of SMEs			
Conference & Workshop Presentations	138 139 192 214 215 216 251	Other Publications	117 118 119 120
Research Reports and other Miscellaneous Publications	117 118 119 120	Media Coverage	265 281

1.3 The Cambridge Integrated Knowledge Centre (IKC)

Project leaders: Alan Hughes, David Connell.

Other Principal Investigator: Andrea Mina

Funding: EPSRC

Collaborating Faculties: Judge Business School, Engineering (CAPE and Institute for Manufacturing), Physics (Cavendish)

Period: 2007-2011

Background

A transformation is currently underway in a large range of computer and sensing technologies, displays and communication systems with the introduction of new low cost, flexible molecular and macromolecular materials. The new materials have a strong research base in the UK, are suitable for a wide range of commercial concerns, both large and small, and hence provide an important opportunity for UK plc. In order to capitalise on the strengths of UK's basic science, the EPSRC has funded a new molecular and macromolecular materials (MMM) Integrated Knowledge Centre (IKC) at Cambridge. This brings together the main research activities in the field at Cambridge, namely in the Electrical Engineering Division (in particular within the Centre for Advanced Electronics and Photonics, CAPE) and in the Cavendish Physics Department. The Centre combines applied technical research with commercialisation-oriented activities and commercialisation research. These involve the Centre for Business Research along with the Judge Business School and the Institute of Manufacturing.

Aims and Objectives

Within the overall IKC programme, the CBR's project has the following key components:

Module 1: Real time observation and analysis of IKC innovation processes

Module 2: Opportunity recognition/roadmapping, commercialisation facilitation and provision of 'venture capital thinking'

Module 3: International comparison of policy frameworks, business models and impact evaluation

Progress

A new CIKC proposal submitted by Alan Hughes, Andrea Mina and David Connell for tranche 2 funding of the project was successful. Good progress was made in the three main activities of the project: (1) real time observation and analysis of CIKC innovation dynamics; (2) facilitation of the commercialisation process and (3) policy research on the funding and governance of exploratory phases of technology development. Two new rounds of interviews with CIKC physicists and engineers took place in Autumn 2009 and Spring 2010 that captured changes in the teams' resources, constraints, behaviours, achievements and expectations. Work by David Connell with a CIKC pre-venture team for the LCOS project revealed that IP was insufficiently well defined for a spin-off company to be formed and a possible "soft start" JV with TTP Group plc was precluded by the existing CAPE contractual relationship with one of its major partners. However, the introduction to TTP has led to some joint working with the academic team on explore the possibility of joint commercialisation projects in certain application fields. In the policy research stream, following fieldwork in Belgium (IMEC), Germany (IIS and IISB Fraunhofer Institutes), Taiwan (ITRI) and South Korea (ETRI), the team visited the Holst Centre (Eindhoven), the Fraunhofer Institute for Photonic Microsystems (Dresden) and the CPI, PETEC and the National Physical Laboratory in the UK. Thanks to additional funding generated through the FP6 DIME programme*, in May/June 2010 the team also completed fieldwork in the US. This included meetings and lab visits at MIT, DARPA, AFOSR, NSF, UCLA, Caltech, Stanford, Berkeley and Silicon Valley.

The policy research programme has recently had demonstrable impact. The CBR team was directly involved in the consultation process for the Hauser Report on The Current and Future Role of Technology and Innovation Centres in the UK. The team contributed a presentation, delivered by Alan Hughes, for the related conference organised by BIS at NESTA (26 January 2010). The CBR team had several additional conversations with the authors of the Review, including Hermann Hauser and Sivasegaram Manimaaran, Assistant Director of the Technology Strategy Board Sponsorship. The Hauser Report was presented to Lord Mandelson on April 25. It includes several citations to the CBR work with specific references to CBR

Working Paper 396 ‘Models of Technology Development in Intermediate Research Organisations’ by Andrea Mina, David Connell and Alan Hughes. David Connell has submitted a separate note on the strategic management of the Government’s proposed new “Technology and Innovation Centres” to David Willetts MP and TSB. The work in this area has been extended in the project described below.

Outputs for The Cambridge Integrated Knowledge Centre (IKC)			
Articles	17	Chapters in books	60 61
Working Papers	90 95 96 97 83 84 106	Conference and Workshop Presentations	138 139 152 153 154 155 156 157 159 160 161 162 163 164 165
Conference and Workshops attended or held	214 215 216 218 219 230 247 248 249	Media	276
Training	288		

1.4 Dynamics of Institutions and Markets in Europe (DIME)

In 2009 Andrea Mina and Alan Hughes secured a grant from the FP6 DIME Network of Excellence to investigate the role, funding, business models and operating mechanisms of University Research Centres established at the university-industry interface. The project is a joint initiative with Chalmers University of Technology and Imperial College Business School. The grant is allowing continuation of the CBR fieldwork on research commercialisation in the US and Japan within the framework set by the CIKC policy research, which it integrates. The team visited the US (MIT, DARPA, AFOSR, NSF, UCLA, Caltech, Stanford, Berkeley and Silicon Valley) in May/June 2010. Arrangements are in progress for meetings and lab visits in Japan in late November 2010.

Outputs for DIME			
Articles	29	Conference & Workshop Presentations	162 247

1.5 Funding Breakthrough Technology

Principal investigators: Andy Cosh, David Connell, Samantha Sharpe

Funding: Cambridge Integrated Knowledge Centre (CIKC) Commercialisation stream

Period: 2009-2010

Aims and Objectives

Commercializing breakthrough technologies is a complex and time consuming process. It is also an essential part of creating value from our science base and contributing to continued economic development. These technologies have demanding funding requirements. Funding needs to cover not only extensive periods of R&D but also market exploration and business development. The aim of this project is to investigate the

commercialization process for breakthrough technologies from science-base to viable commercial applications, using the lens of financing.

We define breakthrough technologies as novel and discontinuous innovations that result in significant and irreversible changes. These innovations are based on new, under or unexploited physical, chemical and biological phenomena, that allow order of magnitude improvement in the performance of existing products and/or the creation of entirely new ones. These novel innovations may entail the development of new 'technology platforms' with applications across a range of products and markets. Many of the resultant applications are not envisaged at the time of the initial innovation.

The research is part of the commercialisation stream of the Cambridge Integrated Knowledge Centre (CIKC) investigating macro molecular materials in Photonics and Electronics. The project contributes to the commercialisation work by providing evidence and informing commercialisation trajectories of breakthrough technologies. This will allow us to interpret the current emergence of molecular and macro molecular advances in Photonics and Electronics (the focus of CIKC technology work) within the recent history of breakthrough technology emergence. The focus on financing allows specific commentary and advice on key factors in commercialisation patterns and the role of finance and financiers in the process, to be provided.

Research questions

- How do commercialisation patterns emerge for breakthrough technologies?
- What are the key factors in these commercialisation patterns for breakthrough technologies – both successful and unsuccessful commercialisations?
- How is the commercialisation pattern funded and by whom?
- What role does funding and financiers play in these commercialisation patterns?

Final report

This report summarises results from seven historical case studies of breakthrough technology development. The case study technologies are Liquid Crystal Displays (LCD), Light Emitting Diodes (LEDs), Optical Fibres, Photovoltaics, Inkjet Printing, Giant Magnetoresistance (GMR) and Microelectronic Mechanical Systems (MEMS). The case studies illustrate the dramatic changes breakthrough technologies can make on the industrial landscape and the context surrounding discovery and commercialisation of these technologies. The potential for extensive industrial development; enhanced national competitiveness; and employment and export growth are the key motivators for government activity in breakthrough technology development. These upside gains can outweigh the downside risks of commercialising these technologies and the knowledge that most of these attempts at breakthrough technologies will come to nothing.

The policy implications are highlighted in the following seven areas:

1. The importance of multi-disciplinary teams working in close proximity
2. The role of 'mission driven' environments that support both pre-commercial and commercial technology development
3. Importance of government R&D contracts for early development work, particularly the US SBIR programme
4. Public procurement as a 'deep-pocketed' and first customers for breakthrough technology
5. Limits and role of current venture capital model in supporting new technology commercialisation
6. Potential for the new Strategic Investment Fund to provide an alternative source of technology funding
7. The role government policy in areas such as space, energy and defence plays on innovation activity and the need for such policy areas to be integrated into a wider view of innovation policy.

Outputs for Funding Breakthrough Technology			
Conferences & Workshops attended	217	Working Papers	103

1.6 FINNOV

Project leader: Andrea Mina

Other principal investigators: Alan Hughes and Stan Metcalfe

Research Fellows: Jocelyn Probert, Samantha Sharpe

Collaborating Institutions: The Open University (UK), Sant'Anna School of Advanced Studies (Italy), Polytechnic of University of Marche (Italy), Economics Institute (Czech Republic), University of Bordeaux (France), University of Sussex (UK)

Funding: European Commission, FP7

Period: 2009-11

Aims and objectives

The CBR is leading the EC FP7 FINNOV consortium activities on 'Capital Markets and Innovation: Financing Business Experimentation in Europe' (WP 3). This work package aims to understand the interactions between innovation and innovation financing and the ways in which innovation finance policy instruments can match the needs of heterogeneous economic and business contexts. Andrea Mina and Samantha Sharpe completed reviews of the literatures and data on venture capital and corporate venture capital. Hughes (with Desyllas of Manchester Business School) explored the links between takeovers and private and public quoted company innovation performance. Jocelyn Probert is developing an in-depth study of the corporate venturing process and its relationship with firm (investor and investee) behaviours. Targets include Unilever, BASF, Dow, Novartis, Siemens and Intel. Recruitment is ongoing for a new Research Fellow to join the CBR team and contribute to the quantitative part of our research programme.

Progress

CBR papers were recently presented at the 2010 FINNOV Conference organised by Prof. Mariana Mazzucato and Prof. Giovanni Dosi at the Sant'Anna School of Advanced Studies (13-14 May, Pisa). Among

the follow-up initiatives, after his participation at the EC FP7 FINNESS (Financial Systems, Efficiency and Stimulation of Sustainable Growth) Workshop held at the Berlin-Brandenburg Academy of Sciences in 2009, Andrea Mina was invited external discussant at EC FP7 VICO Conference held at Politecnico di Milano on 8 July 2010. In June 2010 FINNOV was one of very few EC projects to be invited to the EC 2020 Meeting (Brussels) to discuss the implementation strategy of the new EC policy agenda.

Outputs for FINNOV			
Articles	15 16	Working Papers	95 106
Training	288	Conferences & Workshops attended	248 249

1.7 The UK Innovation Research Centre (UK~IRC)

Director: Alan Hughes

Research Director: Ammon Salter (Imperial College London)

Director of the Knowledge Hub: Michael Kitson

Other principal investigators: Andy Cosh, Bruce Tether (Imperial), Jonathan Haskel (Imperial), Martin Kilduff, Stan Metcalfe, Andrea Mina, Bill Martin, Tim Minshall, David Connell

Senior Research Fellow: Andrea Mina

Research Fellows: Cher Li, Joanne Zhang

Research Associates: Bob Rowthorn, Ken Coutts, Markus Perkmann (Imperial), Philip Ternouth (CIHE)

Funding: ESRC, TSB, BIS, NESTA

Period: 2009-2014

Aims and Objectives

In January 2009 the Centre for Business Research at Judge Business School, University of Cambridge and Imperial College Business School established a new collaborative venture – the UK Innovation Research Centre (UK~IRC). The Centre will receive about £3 million over the next five years to carry out the highest quality research into how innovation can make businesses more competitive, improve public services delivery and help the UK meet the social, environmental and economic challenges it faces.

The Centre was set up in response to The Government’s ‘Innovation Nation’ White Paper (March 2008) and jointly funded by four partners: the Economic and Social Research Council; the Department for Innovation, Universities and Skills; the National Endowment for Science, Technology and the Arts; and the Technology Strategy Board.

The UK~IRC will directly address three key challenges and will also shed significant light on a fourth challenge. The direct challenges addressed are:

- deepening and extending existing knowledge on the nature of open innovation and user-led innovation.
- innovation in services, in particular knowledge-intensive business services, and their impact on innovation and business performance in goods and services systems of innovation.
- innovation performance at a sector and business level and the human intellectual and organisational capital of businesses in selected sectors.

The results of the research programme addressing the above challenges will have direct implications for a fourth challenge:

- the economic, social and environmental effects of innovation by developing a better understanding of the relationships in innovation and productivity at the economy level and at the firm level.

In addition to these key challenges identified in the invitation to tender, we propose to carry out an initial research project with two objectives:

- to establish key UK innovation policy capability needs, including development and application of appropriate methods of policy appraisal.
- to establish international best practice in policy engagement on the basis of a short, but focused international comparison of current innovation policy development and design. This issue is an essential precursor to the effective design and development of the long-run policy focused programme.

We report below CBR outputs relating to the UK~IRC as a whole and in the following sections those for individual UK~IRC projects. We also report the activities of the UK~IRC Knowledge Hub.

Outputs for The UK Innovation Research Centre (UK~IRC)			
Articles	17 19 20	Chapters in Books	60 61 62
Working Papers	90 96 97 106 107 108 109	Conference & Workshop Presentations	138 139 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 187 188 208
Conferences & Workshops attended or held	214 215 216 218 219 220 221 222 223 224 225 226 227 228 229 230 247 249 252 253 254 255 256 257 258 259 260 261 262 263 264	Training	289 290

1.7.1 Innovation and Performance in Business Services

Project leader: Bruce Tether.

Other Principal Investigators: Andrea Mina, Cher Li, Alan Hughes, Stan Metcalfe, Ken Coutts, Bill Martin, Bob Rowthorn

Aims and objectives

This UK~IRC project is concerned with structural changes in the UK economy that have led to unprecedented growth in its service – and especially business service – component. The research programme includes analyses of the macro environment, sectoral landscapes and firm-level behaviour.

Progress

The CBR/Imperial College team has so far achieved important milestones. Progress on the macro component of the project includes the new CBR Working paper by Ken Coutts and Bob Rowthorn "Prospects for the UK Balance of Payments " and the report "*Rebalancing the British Economy: A strategic assessment*" by Bill Martin. Bill Martin also prepared an updated version of his report ("*Rebalancing in the Dark*") for a presentation to HM Treasury economists on 27 July 2010.

Both the collection and validation of original micro data on knowledge intensive service firms and the development of a theoretical framework for their analysis is proceeding as expected. Among the positive results achieved so far by the team there are a number of papers presented at international conferences and submitted to journals. Preparatory work for additional analyses of CIS data is also on-going. Research highlights for this reporting period include presentations at the DRUID Summer Conference, Imperial College Business School, 16-18 June 2010 (Keynote) and the Academy of Management Conference, Montreal, 6-10 August 2010.

Outputs for Innovation and Performance in Business Services			
Research Reports and other Miscellaneous Publications	122	123	Working Papers 85

1.7.2 New Modes of Innovation: Managerial and Strategic Business Practices and Open Innovation

Project leaders: Andy Cosh and Joanne Zhang

Other Principal Investigators: Alan Hughes, Michael Kitson, Tim Minshall (Cambridge) ; Ammon Salter, Oliver Alexy, Elif Moreau-Bascavusoglu(Imperial) ;Business: Gerald Avison, Chas Sims (Business)

Aims and objectives

The growing interest in open innovation has been driven by the phenomenon where organisations are increasingly moving toward network-based forms of innovation, sourcing ideas through licensing agreements, formal alliances and mergers and acquisitions and the use of a wide variety of sources of knowledge for innovation. Although attempts to examine open innovation using the UK innovation survey have made some progress, we still lack in-depth data at the sectoral level and a clear theoretical

understanding of how firms build capabilities to be open and how they can successfully integrate external actors into their innovation processes.

In order to deepen and extend our existing knowledge on the nature and extent of open innovation among UK firms, this project aims to shed light on the organizational mechanisms and capabilities as well as institutional arrangements that are required to foster effective open innovation. In particular, it addresses three questions:

- How do patterns of adoption of OI practices vary across firms, sectors and sizes?
- What are the factors driving the adoption and diffusion of OI practices?
- How does the adoption of OI practices affect firm’s innovativeness and performance?

Progress

During the 10 month period (Oct 2009- July 2010), after conducting a comprehensive literature review on open innovation, we have moved on to carrying out a business survey, which covers both UK manufacturing and business services sectors with over-sampling in certain strategic sectors (i.e. clean tech and pharmaceuticals). Based on multiple rounds of inputs and feedbacks from all team members, we have designed a survey instrument and are in the process of carrying out this survey for small and medium-sized companies (5 to 999 employees).

During this period, we have also made contacts with other leading researchers and research centres in the frontier of OI research such as Henry Chesbrough at HAAS, UC Berkley as well as practitioners such as hi-network, and etc.. We have attended various workshops and conferences, including organising a plenary session on the theme of Open Innovation at the Druid conference in June.

To support young researchers in the frontiers of innovation research, a two day young researcher conference has been planned for Sept at Cambridge; and Nelli Theyel has been awarded a PhD studentship beginning in October to work in this area.

Next steps

Following the execution of the survey we will conduct data analysis, and produce a publication of the survey results in the form of an Innovation Review, which will allow us to disseminate and discuss our survey findings with policy makers and practitioners. We will also disseminate our findings within academic communities through preparing and presenting academic papers. Further, we also aim to carry out the initial survey of open innovation practices amongst larger businesses.

Outputs for New Modes of Innovation: Managerial and Strategic Business Practices and Open Innovation			
Research Reports and other Miscellaneous Publications	121 124 125	Working Papers	85
Conferences & Workshops attended or held	209, 210, 211, 212, 213	Conference & Workshop Presentations	134

1.7.3 Evidence base for innovation policy

Project team: Alan Hughes, David Connell, Michael Kitson, Stan Metcalfe, Ammon Salter and Keith Smith

Objectives and Methods

The objectives of this project are to identify the principal channels by which the evidence base on innovation has informed public policy in an international comparative context. It is intended to run throughout the life of the UK~IRC. It will begin with a series of interviews and symposia to establish key insights into the role of evidence in policy making in the UK in the recent past, and an investigation of the perceptions amongst key policy makers of where key areas of evidence needs currently exist. This will then be extended internationally.

Progress

1. Established contacts for interview programme with key policy actors in UK and other countries that have recently completed Innovation Review (Canada, Australia, Norway, Sweden etc.)
2. Established collaborative arrangements with the Centre for Science and Policy (CSaP) at Cambridge to develop common network of contacts with Whitehall
3. Engaged in 'user' seminars with key UK policy officials to establish present and possible future sources of evidence informing policy making
4. Drafted papers on system based innovation policy in Australia and on evolution of selected key policy initiatives in the UK.

Outputs for Evidence base for innovation policy			
Articles	17 27 28	Chapters in Books	66 67
Conference & Workshop presentations	138 139 152 153 154 155 156 159 160 161	Conference & Workshop held or attended	214 215 216 218 219 220 221 222 223 224 225 226 227 228 229 230
Media coverage	265 266 267 268 269 270 271 272	Other Publications	111

1.7.4 The UK~IRC Knowledge Hub

The UK~IRC Knowledge Hub is engaged in systematic dialogue with key stakeholders to ensure strategic alignment so that activities have maximum external impact on policy and practice and that they inform the research agenda of the centre. The Hub has embarked on knowledge exchange including a wide range of research on innovation (including collaborating with other projects commissioned as part of the initiative) and has developed links and relationships with other national and international institutions concerned with innovation policy and practice, including BIS, NESTA, the Technology Strategy Board, the CBI, the Council for Science and Technology, the OECD, the EU, CIHE (Council for Industry and Higher Education), DIME (Dynamics of Institutions and Markets in Europe). In 2009-10 the Hub worked with communication specialists to develop web and corporate identity which has been applied across a range of media. It has also begun the compilation of a contacts database, has held six dissemination and research development events which were attended by over 350 delegates. The UK~IRC has through the Hub provided policy

briefings and inputs into tailor made events for DCLG, BIS and TSB (in relation to innovation briefings, commentary on OECD innovation policy and impact evaluation respectively), sponsored the launch or publication of 3 major policy reports and developed on-line twitter and blog activity, posted many podcasts on the website linked to Hub events, and actively promoted media coverage of the UK~IRC research in a wide range of published media. The UK~IRC also exhibited at the TSB Innovate '09 conference.

Knowledge Hub Highlights

- The launch of three major reports on the relationship between universities, industry and the third sector, which draw on four new surveys of academics and industry and their attitudes to engagement and exchange. This research demonstrates the rich patterns of engagement that binds UK academics to other parts of society, including government, industry and the third sector, helping to challenge ideas that academics operate in 'ivory towers'. This work has been widely featured in the popular press, including *The Guardian*, *The Times*, *Financial Times*, *Research Fortnight*, *ESRC Today*, *BBC*, *The Australian*, *New Scientist*, *Times Higher Education* as well as leading to presentations to HM Treasury, Department of Business, Innovation and Skills, Research Council UK, AURIL, HEFCE, Cabinet Office, The Hauser Review, NESTA, OECD, International Alliance of Research Universities and a range of other policy forums. The research was cited in The Council for Science and technology report *A Vision for UK Research*, The Royal Society Report *The Scientific Century* and the 2009 BIS *Annual Innovation Report*.
- We launched a major new report on UK innovation policy, challenging the myths of government support for high technology ventures. We explored the development of high tech businesses in the Cambridge area and their growth through the use of soft business models, such as selling research contracts. This report featured in the *Financial Times*.
- We launched a well timed report entitled *Rebalancing the British economy: a strategic assessment*. This research looked to quantify the forces that drove the economy into recession and identified the macroeconomic policies that would support a balanced recovery. This report was featured in *The Guardian*, *The Sunday Times*, *The Financial Times*, *The Observer* and *The Independent*.
- Held first Innovation Summit co-funded with QinetiQ and EPSRC at Royal Society, London.
- We were a major sponsor at the DRUID conference, sponsoring two tracks on open Innovation.
- Presentations and policy discussions held with senior government ministers (the Prime Minister, Lord Mandelson, Lord Myners, Lord Drayson) and senior officials (Director General Science and Research, Director of Research HEFCE, RCUI, TSB, BIS) on Financing Innovation, Innovation Policy and the Future of the Research Base.

Forthcoming Hub Activities

The activities of the Hub will continue to co-evolve with the research agenda of the centre, as the latter develops and expands. The centre utilises systematic dialogue with key stakeholders to ensure strategic alignment, so that activities have maximum external impact on policy and practice.

Corporate Identity

Activities planned: apply identity to other media as required.

Internal communication

Activities planned: develop an intranet facility.

Media relations

Activities planned: continued media releases for appropriate activities and circulation of an electronic newsletter, sent to the UK-IRC database, including those individuals who sign-up via the website.

Website

Activities planned: continued on-going updating of the website including uploading podcasts and other media.

Events

Events in the next year include an early career researchers Conference 'New Frontiers in Innovation' 13-14 September 2010; the Innovation Summit, with partner, 7 December 2010 being held at the Judge Business School, Cambridge and a workshop exploring the interpretation and analysis of CIS data. Further events will be organised including events in collaboration with the main distributed projects and with other stakeholders.

Reports and Publications

Activities planned: continued publication of research findings emerging from the activities of the Centre. These will be published and made available on the Centre's website.

People- based activities

Activities planned: develop Policy Assist in collaboration with BIS and other stakeholders.

Evaluating Performance

An online tool will be developed to analyse the Centre's impact on behaviour, knowledge and network development. It will be used to provide a regular evaluation of how use of UK-IRC materials and participation in UK-IRC activities has influenced behaviour, knowledge or membership of networks. An online questionnaire (such as Qualtrics) will be used to survey participants every 6 months.

Survey and Database Unit

Project Leader: Andy Cosh

Survey and Database Manager: Anna Bullock.

Survey and Database Assistant: Isobel Milner.

Funding: ESRC; various other shorter term funds and contract research grants

Period: ongoing

During the year 2009-10, the unit has been involved with a number of projects described below.

University-Industry Knowledge Exchange: Demand Pull, Supply Push and the Public Space Role of Higher Education Institutions in the UK Regions

This project aimed to identify the factors that affect the incidence, form, effectiveness and regional impact of knowledge exchange activities between the business and higher education sectors in the UK. It focused on the regional aspect of this, in terms of the way these interactions vary across UK regions and within those regions. The research aimed to cover the full range of ways in which the business community and the higher education sector interact and which may affect business and regional economic development. The research considered the objectives for taking part in these interactions and an evaluation of their success

both from a business (or 'demand' side) perspective and from the academic (or 'supply' side) perspective. The research was used to draw implications for public policy in the area of knowledge exchange.

The survey team analysed the academic survey data ahead of the publication of the report in October 2009; and also the business survey data, which is awaiting publication.

Both datasets were archived with the UK Data Archive during the year.

New Modes of Innovation: Managerial and Strategic Business Practices and Open Innovation

Organisations are increasingly moving toward network-based forms of innovation, sourcing ideas through licensing agreements, formal alliances and mergers and acquisitions and through the use of a wide variety of sources of knowledge for innovation. Although attempts to examine open innovation using the UK Innovation Survey have made some progress, we lack in-depth data at the sectoral level and a clear theoretical understanding of how firms build capabilities to be open and how they can successfully integrate external actors into their innovation processes.

This project will shed light on the mechanisms and competences required to foster open innovation. It will show which management practices are crucial for the innovation process and which can promote absorptive capacity and the optimal acquisition of external knowledge. Furthermore it will show how these mechanisms evolve and vary across time and sector. A particular focus of the work will be to consider the implications for policy design of augmenting market failure principles with a systems failure approach.

The survey team has been involved with managing the extensive survey that is part of this project. Businesses with more than 5 and up to 1000 employees, in the manufacturing and business services sectors were included in the survey. The survey, which is still ongoing and voluntary, gives the respondent a choice of replying either by post or on the web.

Survey of Small and Medium Sized Firms

The team has been working with colleagues in University of Auckland Business School, New Zealand and University of Queensland Business School, Australia in a collaboration of small and medium sized business surveys that are due to take place in both countries. The survey instruments have been coordinated so that a comparison can be undertaken between UK, New Zealand and Australia.

Dissemination of Survey Methods

The team gave a presentation to first year PhD students at the Business School on survey methods.

General

The team undertook analysis of datasets in a number of different CBR projects.

Outputs for Survey and Database Unit			
Articles	9	Conference & Workshop presentations	133 134 186
Conference & Workshops attended or held	209 210 211 212 213	Datasets created/Software Written	284 285
Training	287		

Policy Evaluation Unit

Project leaders: Alan Hughes, Andy Cosh

Research Associates: Barry Moore (PACEC), Tomas Ulrichsen (PACEC), Graham Gudgin

Funding: ESRC HEFCE DETI (Ireland), various other shorter term funds and contract research grants

Period: 2001-2009

Overview

The Policy Evaluation Unit at the CBR exists to conduct short-term and long-term contract research in both the public and private sectors. The kinds of projects the Unit undertakes are: a range of evaluations and impact assessments of government initiatives; the evaluation of initiatives designed to provide direct financial support to firms; research on the supply of debt and equity finance for R&D; research on the needs of firms and barriers to R&D; policy development and advice to help shape government initiatives and R&D support; SME Performance and Policy - using appropriate databases to develop and test models of SME performance and its determinants with policy analysis and with methods of complex survey design and analysis necessary to investigate models of business performance. Details of previous projects may be found on the CBR web page and current projects are described below.

Outputs for Policy Evaluation Unit			
Articles	17	Chapters in Books	60 61
Miscellaneous Publications	110 112 113 114 115 116	Conference & Workshop Presentations	152 153 154 155 156 159 160
Conferences & Workshops attended or held	217 218 222		

Evaluation of the Effectiveness and Role of HEFCE/OSI Third Stream Funding: Culture Change and Embedding the Capacity in the Higher Education Sector Towards Greater Economic Impact

Project Team: Alan Hughes, Anna Bullock, Isobel Milner, Barry Moore (PACEC), Tomas Ulrichsen (PACEC)

Funding: HEFCE

Period 2008-9 (extended to 2010)

Aims and objectives

This project consisted of two components. The first was carried out in 2008-9 and was designed to assess of the extent to which HEFCE/OSI third stream funding has secured direct and indirect economic benefits, through embedding a culture and capacity within Higher Education Institutions (HEIs) that supports the transfer and exchange of knowledge between HEIs, business and the wider community. Following the completion of this original project HEFCE funded PACEC/CBR to carry out follow on research in 2009-10. This work deepened understanding of the role of knowledge exchange within the overall set of universities analysed and extended the analysis to the USA.

Methods

The study adopted an innovations system framework for purposes of analysis. Within the innovation system, third stream policy operates at the interface between the science and engineering base, sources of new knowledge, networks and collaborative arrangements and firms' ability to absorb knowledge and technology. It may be seen as an attempt to address institutional failure reflected in the inability of the innovation system to adapt to changed patterns of behaviour and rules or norms affecting inter-agent transactions which arise from broad underlying technological and other changes in the innovation system.

The Evidence Base and Analysis

The third stream funding evaluation was carried out during 2008. The programme of empirical research was set within a traditional evaluation framework analysing the relevant inputs, activities, outputs and the resulting impacts. In addition, cost-benefit balance sheets were produced which compare the inputs to the outputs of knowledge exchange where it quantifiably possible.

Both secondary and primary data are used in the analysis. Secondary data sources include the Higher Education Business and Community Interaction Survey (HEBCI), HESA and other HEFCE sources such as HEI funding bids and annual monitoring reports. A primary data base was also assembled from case study research of 30 HEIs, survey responses from 1,157 academics and from 373 external organisations engaged in third stream activities with HEIs and from interviews with a range of stakeholders including Central Government Departments and the Regional Development Agencies.

The case studies were selected on the basis of a cluster analysis and six key clusters were identified, largely reflecting the scale of their research activity and ranged from the Top 6 HEIs, High Research HEIs, Medium Research HEIs, Low Research HEIs and Arts HEIs .

The follow on studies in 2009-10 involved follow up surveys and interviews with Technology Transfer practitioners and a programme of interview based fieldwork in the US covering the full range of research active US universities in the Mid West, the South and the East and West Coasts.

Selected Key Findings

- Total committed 3rd stream funding between 2000/01 and 2010/11 amounted to £1 billion (at 2003 prices) and increased for all HEI clusters except the Top 6 where it declined by 13%
- There is now strong support for 3rd stream activities by senior HEI management and knowledge exchange is now a core strategic aim across all HEIs
- There is widespread recognition of the synergies between 3rd stream activities and teaching and research with relatively little displacement
- Government policy, a dedicated funding stream, leadership and financial pressures have been the main drivers of the increasing importance of the third stream mission
- SMEs are the most frequent target for 3rd stream activity but for Top 6 and high research HEIs large corporations and the public sector are important
- Knowledge exchange offices are becoming more professional and pro-active towards generating opportunities with external organisations, but most engagements are still initiated without the involvement of the KEO
- Knowledge exchange offices face a number of constraints on their growth namely their ability to attract suitably qualified staff, shortage of finance and negative attitude of academics
- Without HEIF many of the knowledge exchange facilities and infrastructure would not exist or would be of a smaller scale and quality.
- HEFCE third stream funding has played an important role in bringing about positive cultural and attitudinal within HEIs towards knowledge exchange activities
- There is a close alignment of academia and non-academic organisations on the importance of HEIs to the economy and society
- Both supply and demand side barriers constrain engagement between HEIs and external organisations
- Knowledge exchange activities of HEIs generated £1.94 billion in income in 2007 growing by approximately 12 percent per annum over the period 2001-2007
- Income from non-commercial organisations such as the public sector and charities constitutes the largest proportion of knowledge exchange income with income from SMEs generating the least income for HEIs
- Knowledge exchange income grew faster in the strong policy period compared with the weak policy period, for HEIs that initially received HEFCE third stream funding compared with those that did not, and for those that received relatively more funding over the period
- HEIs believe that between 28% and 41% of knowledge exchange income in 2007 can be attributed to HEFCE third stream funding
- Third stream funding has strengthened the link between the triad of teaching, research and knowledge exchange activities undertaken by HEIs

- Most HEIs collaborate to gain access to complementary capabilities
- The collaborative partnerships with large companies are beginning to go beyond the mere transactional towards a much more strategic partnership
- US universities are experiencing similar pressures to those in the UK and have recently developed a relatively enhanced emphasis on a 'holistic' approach to commercialisation and knowledge exchange going beyond an emphasis on patenting and licensing and embracing State and local development strategies.

Outputs for Evaluation of the Effectiveness and Role of HEFCE/OSI Third Stream Funding: Culture Change and Embedding the Capacity in the Higher Education Sector Towards Greater Economic Impact			
Articles	17	Chapters in Books	60 61
Conference & Workshop Presentations	152 153 154 155 156 159 160	Conferences & Workshops attended or held	209 210 211 212 213 217 218 222
Miscellaneous Publications	110 112 113 114 115 116		

Small Firms and the Patent System

Project Team: Alan Hughes and Andrea Mina

Funding: UK Strategic Advisory Board on Intellectual Property (SABIP)

Period: 2009-10

Alan Hughes and Andrea Mina completed a review of the use of patents by SMEs for the UK Strategic Advisory Board on Intellectual Property in winter 2009. The study includes an extensive overview of the literature, a discussion of the international empirical evidence available on this issue, and quantitative analyses of UK Community Innovation Survey 4 and CBR/IPC innovation benchmarking data. The paper was presented at the SABIP Workshop 'The Role and Rationale for Patents' (UK Intellectual Property Office, 11 March 2010) and very favourably received by the SABIP Board. Arrangements are in progress for the paper to be published as a UK Intellectual Property Office working paper.

Outputs for Small Firms and the Patent System			
Working Papers	90 106	Conference & Workshop Presentations	155 156 187 188 247 248 249
Media Coverage	276	Training	288

Building Economic Competitiveness- Lessons from Small Peripheral European States

Project Team: Graham Gudgin, Niall McKenzie

Funding: DETI

Period: 2009-10

This project was funded by the Department of Enterprise Trade and Industry in Northern Ireland (DETI) over the period April 2009- July 2010. The key objectives of the research were as follows:

- To study policy initiatives relating to economic development, productivity growth and competitiveness in small open regional or national economies.
- To do this in such away as to generate ideas of relevance to economic development policies, and particularly policies promoting productivity in peripheral regions in the UK including Northern Ireland.

The final report of the project was in three parts:

1. A comparison of labour and total factor productivity in a range of small, and other benchmark, economies, at whole economy and sectoral level, in order to select a limited number of small peripheral European economies for further analysis. Four countries were selected. These were Finland, Sweden, Estonia and Ireland.
2. Literature reviews on factors promoting high productivity at economy-wide level. Individual chapters covered R&D and innovation; school, vocational and higher education; foreign direct investment (FDI) and corporation tax; policies promoting enterprise; and regulation in product and labour markets.
3. In depth reviews of economic development history and policy in Finland, Sweden, Estonia and Ireland. These reviews covered wide range of policies with particular emphasis on R&D/innovation and education in Finland and Sweden, and on FDI and corporation tax in Ireland and Estonia

The main conclusions were that significant increases in business expenditure on R&D (BERD), high and sustained educational achievements at school, and low corporation tax were all associated with a potential increase in labour productivity large enough to close the substantial existing gap between Northern Ireland and the UK average. Other factors such as further reductions in regulation, or increases in company formation rates, appeared less important. The purpose of the country studies was to examine how countries had achieved high levels of BERD (Finland and Sweden), outstanding school achievement (Finland) or very high levels of FDI. In some cases the impact of policy was relatively easy to see, as in the case of low corporation tax in Ireland and Estonia. In other cases, including school education in Finland, policy initiatives were relatively clear although it was unclear how replicable they were. In the case of R&D/innovation policy the role of successful large high-tech companies was essential. It was not fully clear how much policy had contributed to Sweden's outstanding record if developing such companies, especially now Sweden is within the EU, but the example of Sweden, and collaboration with Sweden, appears to have stimulated the emergence of companies such as Nokia in Finland and to a lesser extent Estonia.

The recommendations from the study were that regions like Northern Ireland should emulate both the FDI policies of Ireland and Estonia and, as far as possible, the home-grown company development policies of

Sweden and Finland. The former can provide rapid catch-up in the short-term while the latter form a better basis for long-term and sustainable prosperity.

The final report has been submitted to the Department of Enterprise Trade and Investment in Northern Ireland and will form a major input into the Department's new economic strategy to be issues in the new year in conjunction with an HM Treasury review of the possibility of introducing reduced rates of corporation tax in NI to bring it line with the Republic of Ireland.

Programme 2: Corporate Governance

Programme Director: Simon Deakin

The Corporate Governance Programme covers a range of projects in the general area of intra- and inter-firm governance and regulation. Issues covered include the relationship between law, finance and economic development; the operation of the corporate governance principle of 'comply or explain'; reflexive forms of governance in financial and labour markets; comparative research on labour market reforms and international competitiveness; pension fund governance; corporate social responsibility; and the relationship between corporate governance and innovation. Both qualitative (case-study) and quantitative methods are used. Funding comes from, inter alia, the ESRC, the EU and the UK and Japanese governments.

In the course of the last year, two ESRC-funded projects, on the relationship between law, finance and development and the 'comply or explain' principle in corporate governance respectively, were completed, along with work on reflexive governance (REFGOV), funded by the European Union as part of the Sixth Research and Development Framework Programme. Work is continuing on labour market resources and capabilities (the CAPRIGHT project, also part of the European Union's Sixth Framework Programme) and on pension fund governance and corporate social responsibility (funded by the Belgian national research council, Belspo). These are both large-scale collaborative projects involving a number of research institutes in Europe and overseas. Work on ethics and globalization also continued in the year under review. In the course of the year new funding was obtained from the Japanese government, via our research partners at ITEC, Doshisha University, to support research on corporate governance innovation.

Researchers across all projects in the programme continued to publish in high-quality journals. Further recognition for the quality of work in these projects came in the form of the award to a CBR paper, for the second year running, of the European Corporate Governance Institute's prize for the best working paper on a law-related corporate governance theme. In addition, the ESRC-funded 'Law, Finance and Development' project was given an 'outstanding' evaluation.

New areas for funding are being developed. These include research on the governance-related aspects of bank failure during the financial crisis of 2008-9; further work on constructing and analysing legal indices (building on the success of the 'Law, Finance and Development' project); research on corporate governance in transition systems; and work on the relationship between corporate governance and innovation (building on the Japanese government grant obtained in 2010).

2.1 Law, Finance and Development

Principal Investigators: Simon Deakin, John Armour and Ajit Singh

Visiting Fellow: Prabirjit Sarkar

Research Associates: Beth Ahlering (PA Economic Consulting), John Buchanan (CBR), Nina Cankar (University of Ljubljana), Dominic Chai (Manchester Business School), Gerhard Schnyder (Birkbeck, University of London), Priya Lele (Ashursts LLP), Viviana Mollica (Queen Mary, University of London), Sonja Fagernäs (University of Sussex), Mathias Siems (UEA).

Funding: ESRC; Newton Trust; Japanese Ministry of Education COE grant to ITEC, Doshisha University, Oxford-Man Institute of Quantitative Finance

Period: 2005 – 2009

Aims and objectives

This project has been concerned with the question of how legal rules and institutions shape financial development and economic growth. For the past decade or so, legal reforms worldwide have followed a consistent pattern. Shareholder rights and corporate governance standards have been strengthened in the belief that this would lead to more dispersed share ownership and more liquid capital markets. Creditor rights have been enhanced with a view to fostering banking sector development and flows of private credit. Labour laws, by contrast, have been subject to deregulation aimed at creating more flexible labour markets. A theoretical underpinning for these developments was provided by the so-called legal origins hypothesis, which claims that legal systems affect long-run patterns of economic growth. Systems with a common law origin are said to favour market-facilitating laws, whereas those with roots in the French, German or Nordic civil law tend towards an activist role for the state. These underlying differences of regulatory style are reflected in the contents of the laws governing the business enterprise, and in cross-national differences in economic performance. As applied by the World Bank through its *Doing Business* Reports, this approach has directly influenced policy initiatives in dozens of countries.

There are problems with the legal origins hypothesis which the project set out to address. The most serious is that evidence for the claims it makes rests on quantitative indicators of legal systems which offer a purely cross-sectional view of the law (mostly of the content of laws as they were in the late 1990s). This is to assume that laws change relatively little and that the rank order of countries, in terms of the impact of regulation on business, does not alter much. In this context, CBR project addressed a need for longitudinal data on legal change and for case studies which could provide a more in-depth and nuanced view of the forces driving the law reform process at country level, and its effects.

Results

We produced new datasets charting legal change over time in the areas of shareholder protection, creditor protection and labour regulation. We used indices with up to 60 indicators to code for the law of five significant countries (France, Germany, India, the UK and the US) for 36 years (1970-2005), and reduced-form indices of 10-12 indicators to code for a wider sample (25 countries) for the period 1995-2005. The coding methods used marked an advance on previous studies, by incorporating a wider range of legal and regulatory variables and taking into account the different ways in which regulatory rules can be expressed (as mandatory rules or as 'defaults' applying in the absence of contrary agreement). We then used time-series and panel data econometric analysis to test for correlations between the scores in the indices and economic performance variables.

The data we collected give a somewhat different picture of the state of the law than that provided by the early legal origins papers. We see considerable change in the area of shareholder protection and corporate governance, with civil law systems ‘catching up’ with their common law counterparts, in particular over the decade to 2005. This suggests that lock-in through legal origin has not been much of an obstacle to the formal convergence of systems. For creditor protection, we do not find such a clear common law/civil law divide, and a less clear convergence trend. In labour regulation, there is a more distinct common law/civil law divide but not much evidence of convergence of systems.

Our econometric findings call into question aspects of the legal origin hypothesis and its use by policy-makers. We find that increases in shareholder protection have not led, on the whole, to greater stock market development. This suggests that a ‘one size fits all’ approach to corporate governance reforms, stressing elements of British and American practice – the role of independent boards and the market for corporate control – may not be working as intended, in particular in civilian systems. On the other hand, we have some evidence that a strengthening of shareholder rights has a positive impact on stock market growth, and changes to the law of secured credit may be assisting banking development in emerging markets. In the area of labour law, we find little or no evidence to support the claim that deregulation leads to superior economic outcomes. On the contrary, at least for civilian systems, we find that the strengthening of dismissal protection has positive impacts on productivity growth, and that working time reforms may help to foster employment growth. In the US, a strengthening of dismissal laws led to higher productivity growth but reduced employment growth.

Our case studies confirm the view that there is no single best model for the laws governing the business enterprise. We show how the reception of Anglo-American norms in civilian and developing systems has often been incomplete and with unanticipated effects. There has been convergence of form, but not of function. Political structures have greater explanatory power than legal origin in accounting for the nature of legal change, but there is also a need to understand the role that institutional forces play in shaping and changing the preferences of interest groups.

The project was completed in 2009. It produced over thirty significant publications and the findings were extensively disseminated to researchers and policy makers. The datasets we created are already being used by the wider research community and we will extend them in future work. The project was given a grade of ‘outstanding’ in an ESRC assessment in 2010 and one of the principal project outputs, ‘How do legal rules evolve? Evidence from a cross-country comparison of shareholder, creditor and worker protection’ by Armour, Deakin, Lele and Siems was awarded the ECGI Allen and Overy prize for legal research on corporate governance in 2010.

Outputs for Law, Finance & Development			
Articles	1 2 3 7 10 13 14 33 34 35 36 38 39 40 41	Chapters in Books	48 50 52 53 56 57 69 70 71
Working Papers	74 78 79 80 81 87 98 102	Conference & Workshop presentations	131 132 136 137 140 141 142 143 149 197 198 199 207
Media Coverage	283	Datasets Created/Software written	286

2.2 REFGOV: Reflexive Governance in the Public Interest

Principal Investigator: Simon Deakin

Visiting Fellow: Prabirjit Sarkar

Research Associates: John Armour (Oxford), John Buchanan (CBR), Catherine Barnard (Faculty of Law, Cambridge), Nina Cankar (University of Ljubljana), Jodie Kirshner (Faculty of Law, Cambridge), Sue Konzelmann (Birkbeck College, London), Viviana Mollica (Queen Mary, University of London), John Paterson (University of Aberdeen), Steve Pratten (King's College, London), Mathias Siems (UEA), Simon Turner (London School of Hygiene and Tropical Medicine), Frank Wilkinson (CBR)

Funding: European Union Sixth Research and Development Framework Programme.

Period: 2005 -2010

Aims and objectives

This five-year Integrated Project funded by the EU's Sixth Research and Development Framework Programme ('FP6') was completed in the spring of 2010. The CBR's contribution in the final year of the project related to the Corporate Governance subnetwork, as part of which it coordinated the work of research groups in Belgium, France, Hungary, Italy, Portugal and the UK. (The CBR's contribution to the Fundamental Rights subnetwork of REFGOV was completed in 2009 and reported in last year's CBR Annual Report.)

The aim of the corporate governance subnetwork within REFGOV was to carry out a programme of empirical research on corporate governance that was comparative in scope, broadly interdisciplinary, and informed by developments in reflexive theories of learning and evolution. The empirical work included legal studies of the development of norms and standards in the corporate governance field at global, European, national and sectoral level; econometric analysis of the impact of corporate governance norms on financial development and managerial practice; and case studies of the operation of corporate governance standards at sector and enterprise level.

Results

The starting point for the research was a conception of reflexive governance as a set of mechanisms for dealing with coordination failures, in the name of the public interest, in ways which go beyond hierarchical or 'command-and-control' techniques of regulation. The corporate enterprise provides a useful context in which to study reflexive governance, given the coexistence, in this field, of different forms of regulation (legislation, case-law, codes, disclosure regimes, and accounting standards). There has also been a conscious mixing of what might be called 'regulatory' and 'incentive-based approaches'. A good example of this is the 'comply or explain' principle which underlies the corporate governance codes which first emerged in the 1990s.

One of the concrete themes that we have been looking at concerns the growing influence of the so-called 'shareholder value norm' in policy and practice. A first empirical finding, based on a comprehensive mapping of developments in company legislation and corporate governance codes in a wide range of countries in the EU and overseas, is that corporate governance standards based on the shareholder value approach, in particular norms relating to independent boards and minority shareholder protection in takeover bids, were very widely adopted in many countries during the course of the 1990s and 2000s. The shareholder value model originated in common law/liberal market systems, such as the UK, and then spread to civil law/coordinated market regimes. It was widely diffused in developing and transition countries. However, our empirical work has also established that this convergence on the shareholder

value approach has taken place largely at the level of formal laws, and has had a more limited impact on the practice of governance at market or firm level. Thus econometric analysis has shown that formal strengthening of shareholder rights has not, on the whole, been correlated with financial development, in the sense of producing an increase, for example, in stock market capitalization or private credit relative to GDP. These findings call into question some of the core predictions of mainstream corporate governance theory as well as the expectations of policy-makers in this field. Case studies of regulatory change have provided possible explanations for the non-effect of legal reforms, by highlighting the role of path dependencies at national level. Case studies of the Hungarian and Slovenian corporate governance codes have stressed the importance of local path-dependent factors, arising from the transition process, in limiting the degree of convergence with Anglo-American practice. A case study of the operation of the Belgian corporate governance code illustrates the lack of fit between norms designed for the liquid capital markets and dispersed ownership which characterize British and American practice, and the concentrated ownership structures of most Belgian listed companies.

Sectoral and firm-level case studies show how, in a number of contexts, the influence of the shareholder-value norm has been mediated by institutional and organisational practices which reflect a stakeholder-orientated or communitarian logic. Econometric analysis of the relationship between corporate governance forms and HRM practices at workplace level in Britain and France identified growing financial pressures on firms in both countries, but also evidence of 'negotiated shareholder value' or rent-sharing between workers and shareholders, in particular in the French case. The use of contractual devices for risk-sharing and deliberation between stakeholders was highlighted by a study of the construction of the Heathrow Terminal 5 building. This work suggested that, even in the context of the strongly shareholder-orientated UK system, utility regulation and contractual governance could play a role in lengthening time horizons, thereby mitigating short-term financial pressures, and embedding a learning-based approach to problem solving. A study of hedge fund activism demonstrated the limits of the shareholder value approach in continental Europe and Japan, against the background of a communitarian ethic within firms and a relational approach to investment practice from institutional shareholders. The analysis of network relations in the wine producing sector stressed the endogeneity of practices with regard to local conditions, which led to different forms of network relations emerging across the different countries studied, but also within them, as different regions exhibited divergent tendencies. This work also shows that transnational norms governing SMEs and network forms may play a role in removing barriers to the emergence of effective forms of inter-firm contracting.

A central goal of the work of the corporate governance subnetwork has been to integrate empirical research within the broader theoretical framework of reflexive law theory. In particular, reflexive insights were applied to analysis of the recent financial crisis. The perverse effects of bonus regimes and executive payment systems, and the ineffectiveness of internal audit mechanisms and external shareholder monitoring, highlight the limited effectiveness of incentive systems based on new-institutionalist approaches to governance.

Another of the concrete themes which we have been exploring relates to corporate social responsibility ('CSR'). Because corporate reputation has an economic value, firms are incentivised to respond to demands from shareholder activists and the wider public to minimize the harms they displace on to third parties. However, our empirical research suggests that CSR often misses its targets. Investors with a 'socially responsible' agenda are deterred from seeing it through, because these activities involve high costs to them, whereas the benefits flow to other investors, or to 'society' generally. From a reflexive point of view, what is missing is the kind of learning process which would embed CSR in organisational practices.

The CBR played a major role in organizing the final conference of the REFGOV network which took place in Brussels in May 2010. The results of the evaluation of the REFGOV project by EU assessors will be known later in 2010

Outputs for REFGOV: Reflexive Governance in the Public Interest			
Articles	2 3 5 6 7 10 11 13 14 26 33 34 35 36 38 39 40 41	Chapters in Books	46 47 48 49 50 52 53 56 57 69 70 71
Working Papers	74 78 79 80 81 87 91 92 98 101 102	Conference & Workshop presentations	130 131 132 135 136 137 140 141 142 143 149 150 151 175 176 177 178 197 198 199 207
Media Coverage	283	Datasets Created/Software written	286

2.3 CAPRIGHT: Resources, Rights and Capabilities in Europe

Project leader: Simon Deakin

Research Fellow: Aristeia Koukiadaki

Research Associates: Catherine Barnard (Faculty of Law, Cambridge) and Frank Wilkinson (CBR)

Funding: European Union Sixth Framework Programme

Period: 2007 – 2011

Aims and objectives

This project is funded by the Sixth Research and Development Programme of the EU and coordinated by the IDHE-Cachan unit, based near Paris. The main contribution of the CBR has been to undertake a series of case studies of employee information and consultation mechanisms in the context of corporate restructuring. The members of the CBR team have also carried out work on the impact of transnational economic integration on the operation of labour standards at national and sectoral level, including an analysis of the law and practice relating to local labour clauses, and have worked on developing the theoretical framework for the project, which is draws on capability theory. The empirical parts of the project were completed in 2010 and the project concludes in 2011.

Results

A major initial focus on the research was on the lessons to be drawn from the construction of the new Terminal 5 building at Heathrow airport. The work built on a theoretical framework which stresses 'internalist' approaches to learning and governance based on the importance of communicative processes, dialogue and deliberation. Material drawn from an in-depth case study on the construction T5 was deployed to examine the development and impact of learning both within and between the subsystems of corporate governance, utilities regulation, multi-firm contracting and industrial relations in large construction projects. T5 took around 20 years to plan and build and started operations in March 2008, six years after construction started. Its opening was marked by confusion and controversy, but as a construction project, however, T5 was highly successful. It was based on a novel approach to risk-sharing between client and suppliers and it incorporated

innovative mechanisms for dialogue and monitoring between the actors involved, that is, the client, BAA, the contractors on the construction and engineering sides of the project, and trade unions representing the groups of workers involved. There is evidence that these arrangements contributed positively to a number of successful project outcomes, above all the completion of the construction work on time and on budget, an above-industry health and safety record, and virtually no time lost to disputes. The case of Terminal 5 demonstrates how attempts to build a 'systemic' approach to the project revolved around the interactions between a wide range of actors and processes and beyond the contractual arrangements. However, case shows that in the absence of mechanisms of structural coupling between different subsystems, the capacity for adaptation along the lines of a dynamic learning model is reduced. Although the difficulties surrounding the opening of T5 in March 2008 were unconnected to the construction of the new Terminal, the wider future of the institutional mechanism used to promote cooperation and risk-sharing in the construction project is in doubt, in part because the model it embodies was not taken up for the 2012 London Olympics.

Building on the T5 study, a wider set of case studies was then undertaken, looking at the role of employee consultation arrangements in corporate restructuring, as influenced by the implementation of the Directive 2002/14/EC through the UK Information and Consultation (I&C) Regulations 2004. A qualitative case study approach was adopted with a view to examining changes in companies where I&C arrangements were introduced or existing structures amended in light of the I&C Regulations. Case studies were conducted in companies operating in the financial services, business services, voluntary, chemical and retail sectors of the UK economy. The study involved data collection based on a combination of semi-structured interviews with key actors (i.e. senior and human resource managers, employee representatives, and trade union representatives and officials), non-participant observation of meetings between management and labour (where possible), and analysis of relevant documentary material, such as I&C agreements, minutes of meetings, documents disseminated to the workforce and trade union statements and communications. The objective was to highlight the influence of the form and content of the implementing legislation on the development of social dialogue procedures. The capability approach was used to draw attention to the relationship between the legal-institutional framework and the development of the 'opportunity' and 'process' aspects of the 'capability for voice' of the I&C arrangements. Over 70 interviews were carried out as part of this work, which was completed in 2010.

We found that in almost all cases where I&C arrangements were involved in restructuring, decisions to proceed to restructuring were made by management acting unilaterally. Consultation with employee representatives was confined to the process of handling job losses. I&C arrangements were not seen by management as having a role in strategic decision-making. In most cases, the formal announcement of management proposals for restructuring was also marked the start of the consultation process, excluding any possibility for consultation to take place at a point when proposals were still at a formative stage. Employee representatives described the outcomes of consultation as ranging from 'mutually acceptable' arrangements, through 'acceptance of the inevitable', to a feeling among employees that 'managerial prerogative has been imposed on them.' Opportunities for employee representatives to open up new areas of social dialogue with management on an on-going basis were limited. As a result of the denial of a preferred role for trade unions within the I&C Regulations, possibilities for creating 'thick interactions' between the union channel and the newly created universal channel of employee representation were significantly constrained. Where trade unions had previously had an established a role in discussions with management, I&C arrangements tended to adopt the unions' approach towards the restructuring. In only a few cases had the introduction or amendment of I&C arrangements enabled unions to address a broader agenda than previously.

Outputs for CAPRIGHT: Resources, Rights & Capabilities in Europe			
Articles	5 6 10 11 12 21 22 23 24 25	Chapters in Books	45 46 47 58 59 63
Working Papers	88 93	Miscellaneous Publications	126 127 128 129
Conferences & Workshop Presentations	130 141 142 143 144 145 146 147 148 179 180 181 182		

2.4 Soft Regulation: Conforming with the Principle of ‘Comply or Explain’

Project team: John Roberts, Paul Sanderson, David Seidl

Funding: ESRC

Period: 2006-10

Rationale and method

To encourage innovation and economic growth, governments advocate flexible proportionate risk-based approaches to regulation with minimal state intervention, where the level of monitoring and control is determined by the extent to which regulatees pose a risk. The success of such regimes depends not only on the ability of regulators to correctly identify levels of risk but also on regulatees’ attitudes to compliance. Understanding compliance practices and what drives them is of particular importance in assessing likely outcomes from voluntaristic forms of regulation such as national codes of corporate governance. One of the principal means by which regulatees can exercise a degree of flexibility in determining how they comply with regulations is by use of the comply-or-explain mechanism. This allows regulatees to either fully comply with a rule or explain why compliance is not possible or not optimal. The most prominent use of comply-or-explain is within codes of corporate governance. Yet while flexible approaches to regulation, particularly risk-based regulation, have been examined in some detail there has been little research on the actual practice of comply or explain.

To address this we set out to investigate the way directors of large listed companies perceive the choices they have to make regarding complying, or explaining deviations. Both comply *and* explain, are essentially compliant in that not to comply is equally acceptable under the code as long as an acceptable explanation is given. We studied decision-makers’ perceptions of the requirement to comply or explain in two countries, the UK and Germany - countries with broadly similar codes of corporate governance but contrasting political, legal and capital market structures and traditions. The differences between the two countries affect approaches to regulation, and in particular, the regulation of corporate behaviour. It is not just that UK directors are more familiar with self regulation than their German counterparts but rather that self-regulation itself is understood rather differently in the two countries. In the UK, each layer of control is separate. The state has responsibility for both general statutes and specific corporate law but delegates responsibility for control of areas unsuitable for hard law to appropriate organisations. However, in the German corporatist tradition, responsibility is jointly shared rather than divided. Control is thus coproduced using a form of co-regulation.

The empirical part of the project was carried out during 2007 and 2008. We employed a two phase qualitative research design consisting of (i) document analysis and (ii) substantive interviews, split between the UK and Germany. Our initial analysis of the corporate governance statements of the largest FTSE 100 and DAX 30 companies showed a degree of homogeneity so the number of statements analysed was increased to cover the largest 130 listed companies in both countries. The interviews had a different focus in the two countries, reflecting their different experiences of corporate governance codes. The UK interviews addressed how the code conditioned the work of the board, while in Germany they provided more detailed information on the code development process. The analysis and writing up occurred during 2008 and 2009.

Results

Phase 1. Analysis of Corporate Governance Statements

Compliance rates. The declared compliance rates in our study differ considerably. While over 50% of the UK companies analyzed were fully compliant, the respective number in Germany was less than 15%. In both countries compliance levels dropped as company size decreased.

Justified deviations. Consistent with the best practice logic underpinning comply-or-explain one might expect to find justifiable explanations are primarily company specific but this is not the case. Such explanations account for just 50% of declared deviations in the UK and only 20% in Germany. Of these, transitional justifications from new entrants were fairly frequent in the UK where overseas listings are fairly common. In Germany, by contrast, the most common company specific explanation was board size.

Unjustified and poorly justified deviations. A large number of explanations were clearly not consistent with the principles underpinning comply-or-explain. Of these some were pure disclosures where non-conformance was stated without any obvious reason being given. While these amounted to just below 15% of deviations in the UK the respective figure for Germany was almost 40%. Both in the UK and Germany almost 10% of explanations were "empty," or disingenuous. Taken together almost 25% of UK deviations, and almost 50% of German deviations were not properly justified.

Developmental deviations. A further interesting finding concerns what we referred to as a "principled justification" against the content of a particular code provision. A principled justification is an implicit criticism of the code drafters. For example, in Germany a number of companies stated they would not, as a matter of principle, impose a 'reasonable' deductible (personal excess) on their directors' D&O (Directors and Officers' negligence) insurance, partly because the Cromme commission would not clarify what was meant by reasonable.

Size effects. In general, there appeared to be significant differences in explanations amongst the different indices or size bands (top 30 companies, middle 50 and bottom 50). While evident in both countries these differences were more prominent in Germany. Smaller companies have less resources and some code provisions are of less relevance to them, while larger companies are more exposed to public scrutiny.

Phase 2. Analysis of corporate governance interviews.

Sense of 'ownership'. Most UK directors and company secretaries perceive the Combined code as embodying best practice as Cadbury intended, and as a consequence exhibit a sense of ownership of the code. This sense of ownership is rarely found amongst German directors.

The importance of monitoring. The dominance of institutional investors in the UK ensures interested and powerful monitors in what was always conceived of as a form of 'market regulation' whereas there are more family owned companies in Germany and bank finance plays a far greater role in the German capital market.

Pressure to conform. Both sets of interviewees felt considerable pressure to be fully conformant rather than engage with comply-or-explain. This was depicted often as a response to the costs of non-conformance, in terms of both resources and reputation, but is also related to the length of time the two codes have been in force and the extent to which they are considered to articulate best practice. Interestingly, the pressure interviewees felt on them to fully conform may be more perceived than real.

Comply-or-explain: reality-or-illusion? Although there was more enthusiasm for the comply-or-explain approach from UK interviewees than their German counterparts, in practice usage was greater in Germany. In the UK comply-or-explain seemed almost to serve as a security blanket – providing directors with reassurance that control over the governance of their companies had not been lost. In both countries many interviewees spoke of key rules as unbreakable, akin to hard law, which in Germany may well be true. Deviation is simply not acceptable. These rules form the bedrock of the code. A second smaller stratum of rules may have been or become sub-optimal and following substantial deviation may be amended and amalgamated into the first lower stratum. The final thin top layer consists of a very small number of rules such as board independence where temporary deviation may be unavoidable from time to time and it is these, and these only, where a valid explanation is deemed entirely acceptable.

Outputs for Soft Regulation: Conforming with the Principle of 'Comply or Explain'			
Articles	31 32 37	Working Papers	100
Conference & Workshop Presentations	193 194 195 196	Media	282

2.5 Addressing Gender Inequality through Corporate Governance

Project Leader: Simon Deakin

Research Associates: Jude Browne, Dominic Chai, Colm McLaughlin

Funding: ESRC Gender Network

Period: 2007-10

Aims and objectives

The aims of this project, which ended in 2010, were (i) to examine the role of mechanisms of corporate governance and corporate social responsibility in promoting gender equality and diversity, (ii) to compare the effects upon firm-level practices of shareholder engagement, an instance of 'reflexive' or 'soft' regulation, with the impact of 'hard' regulation deriving from equal treatment legislation, and (iii) to relate empirical findings to debates around the drawing up of the Equality Act 2010.

In addition to carrying out studies of shareholder activism and engagement on pay equity issues, we sought to compare the implementation of the equal pay principle in firms with different corporate ownership structures and across the public-private sector divide. Case studies were carried out in 20 organisations (5 listed companies, 3 LLPs, 2 not for profit, 2 universities, 2 civil service departments, and 6 local authorities). We supplemented this with a quantitative analysis, using WERS 2004, of the relationship between organisational form and gender equity policies and practices at establishment level. We also interviewed trade unions, legal practitioners and local authorities as part of a study of the factors behind the recent growth in equal pay litigation.

Results

The analysis of WERS 2004 shows that among private-sector organisations, having a stock exchange listing makes it significantly more likely that a firm will have a formal gender policy. However, being listed makes little or no difference to whether a firm monitors and reviews gender outcomes in relation to recruitment and pay. By contrast, public sector employers are significantly more likely than all private sector ones (including listed companies) both to have a formal gender policy and to monitor and review outcomes. We draw two conclusions from these results. First, there is some evidence that a stock exchange listing matters to the policies of firms. This can be interpreted as evidence of shareholder pressure on listed companies to show that they comply with good practice on matters of gender equity. However, this pressure is limited in its effects; it makes firms more likely to put in place a formal commitment on gender equality, but not, it would seem, to follow up on that through the monitoring and reviewing of outcomes. Secondly, the clear distinction, in terms of both policies and practices, between public sector organisations and the rest, suggests that 'hard' regulation has a greater impact on organisational attitudes and practices towards gender equality than 'soft regulation' based on shareholder pressure. Since the early 2000s, public sector organisations have been more directly exposed to regulatory requirements in the area of equality of treatment than private sector ones. This difference is reflected in the more extensive steps taken to promote, monitor and review gender equity policies in the public sector.

Our main finding from the case studies on shareholder activism was the limited impact of the mechanisms advocated by the Kingsmill review. On the part of investee companies, the voluntary nature of the disclosure mechanism was seen to be unsatisfactory; there was support for legal enforcement of pay audits as a means of ensuring a more effective flow of information concerning organisational practices. On the part of financial management companies, SRI-based approaches were growing in importance. Asset management firms practising SRI were using a mix of strategies to make an impact ('screening' of stocks on ethical grounds, combined with direct engagement with investee companies). However, gender equity issues had a low profile within SRI as a whole. Awareness of the Kingsmill initiative in investment circles was low. Pension fund trustees, while aware of the importance of HRM issues when setting investment policies, were giving them a low priority in relation to other issues such as the solvency of funds at a time of retrenchment for defined benefit schemes.

Our organisational case studies suggest that governance structures matter in the sense of mediating the impact of gender equity policies on organisations. The listed companies we interviewed saw reputation as a driver of corporate practice on issues of diversity in general and gender equity in particular. However, shareholder pressure and capital market disclosure rules were seen as less important in this regard than a perception of a general 'business case' for gender equity, in particular in sectors with a predominately female customer base. The emphasis on reputation complements one of the results from our quantitative research on the impact of listing namely that listed firms are more likely than non-listed ones to have formal gender policies, but not to engage in the monitoring and review of gender equity practices and outcomes. It could be the case that reputational concerns are driving some firms to maintain the appearance of gender equity without following through on the practice. In the public sector and in universities, by contrast, our case studies suggest there was both a formal commitment to equality and regular monitoring and reviewing of outcomes, supporting the finding to the same effect from our quantitative analysis. The legal duty to promote gender equality, which applies to public sector bodies but not to private sector ones, has been a significant factor in shaping practice in the public sector. The duty to promote equality in the public sector was also having influence on firms tendering for public contracts. We found this to be a major driver of both policy and practice on the part of the LLPs we interviewed, although they also reported some uncertainty on exactly how far their performance on gender and diversity matters impacted on tendering outcomes.

Interviews with the law firms, unions and local authority employers involved in some of the largest equal pay cases, involving thousands of individual claims, have provided us with a detailed picture of the

strategies of the actors concerned and of their uses of the legal framework. We found little support, even on the part of the unions, for moratoria on equal pay claims of the kind which some commentators have argued for as a way of allowing compromises to be reached through collective bargaining. Solutions to problems of delay and expense in litigation will have to work within the existing legal framework, which emphasises individualised claims.

Outputs for Addressing Gender Inequality through Corporate Governance			
Articles	4 13	Chapters in Books	49 50 51 52 53 55 64
Working Papers	79 80 81 86 94	Conferences & Workshop Presentations	135 136 137 183 184 185

2.6 Pension Fund Governance and Socially Responsible Investment

Project Leader: Simon Deakin.

Research Associates: John Buchanan (CBR), Dominic Chai (Manchester Business School), Andrew Johnston (University of Queensland), Sue Konzelmann (Department of Management, Birkbeck College, London), Wanjiru Njoya (Faculty of Law, University of Oxford)

Funding: Belspo (Belgian Science Foundation); additional funding from the Japanese Ministry of Education COE grant to ITEC, Doshisha University, and the CBR

Period: 2007-11

Aims and objectives

This project, funded by the Belgian Science Foundation (Belspo), is looking at issues of pension fund governance and socially responsible investment ('SRI') from the perspective of reflexive governance theory, with the CBR working as part of a network with teams from the Catholic University of Louvain and the University of Liège. The work began in 2007. The CBR's empirical work is contained in two working papers which are currently at the work-in-progress stage: Buchanan and Deakin on pension fund governance, and Buchanan, Chai and Deakin on shareholder (both pension fund and hedge fund) activism. Theoretical and policy papers include work by Johnston on EU corporate governance and takeover bids, Njoya on the relationship between employment law and corporate governance, and Konzelmann and Deakin on the implications for corporate governance of the financial crisis.

Results

There is currently a complex mix of contractual governance (auto-regulation), coordinated self-regulation (co-regulation), and hetero- (or external) regulation in the case of UK defined-benefit pension schemes. The basic legal concept of the trust which governs pension funds in the UK is a highly flexible one, and companies have traditionally had considerable leeway in constructing defined-benefit pension schemes according to their particular needs. The most recent trend has been towards ever tighter regulation of scheme deficits, which are regarded as debts due from the scheme sponsor (the employer). From 2004 the Pensions Regulator (TPR) was given far-reaching powers to order shortfalls in funding to be met by scheme sponsors. This is one of the factors making defined-benefit schemes less attractive to employers, who are starting to close them to new entrants, and, in some cases, to existing members (with respect to future service). Another factor is that potentially open-ended liabilities under defined-benefit pension schemes are seen as reducing shareholder value, in the sense of undermining the financial position of the sponsor

company. This trend has been exacerbated by changes to the accounting treatment of schemes associated with the actuarial valuation standard, FRS17, which came into force in the early 2000s.

These various pressures have highlighted potential conflicts of interest affecting scheme trustees, in particular those trustees who are also senior managers and/or directors of the scheme sponsor. Our work has shown that conflicts of interest are particularly sharp during takeover bids. Trustees have a duty to ensure that takeovers are consistent with the solvency of the fund while, as directors or employees of the sponsor company, they may also have a view on whether they are in the interests of the company's shareholders and/or its workforce. More generally, we have found that pension funds have been altering their practices in such a way as to recognize the need for trustee independence from the sponsor company, but that this trend is tempered by the perception that members and sponsors also have interests in common. Thus members have a strong interest in maintaining the support of sponsors for the continuation of schemes, in a situation where those sponsors have the legal option of terminating or modifying them.

Pension funds also shape the wider corporate governance system as investors. The regulatory framework for pension fund activism is set, initially, by general principles of fiduciary law, which see trustees as fiduciaries, under a duty to obtain the maximum returns for members which are consistent with the long-term sustainability of schemes. Our empirical work suggests that while socially responsible investment (SRI) practices are growing in influence, this trend remains limited in the UK market. There is scepticism among trustees of the value to members of an SRI-based approach. Although most trustees and advisers now accept that an SRI-based approach is not incompatible with trustees' fiduciary duties (a major change from two decades ago), few accept the argument, that some international agencies have made, that it is *necessary* for funds to take SRI criteria into account as one aspect of a balanced portfolio.

In practice, few UK-based pension funds engage in activist strategies directly, in contrast to the position in the US. However, many UK funds are investors in hedge funds and private equity funds which take a strongly financially-orientated, shareholder-value approach to governance. Our case studies suggest that both these types of investment create sharp tensions between short-term shareholder value, on the one hand, and stakeholder concerns, on the other. We have made a detailed study of interventions by activist hedge funds in British and Japanese listed companies. The Japanese cases are interesting for the opportunity they provide to study the clash between the financially-driven, shareholder value orientation of the mostly British and American hedge funds and the stakeholder-orientated or communitarian ethic of many of the Japanese firms in which they invest. While a first phase of activist interventions was successful in generating above-market rates of return for the hedge funds in Japan, in a second phase the funds were less successful, as the result of resistance from target managers, limited support from other shareholders (including many non-Japanese investors), and widespread approval, in but also beyond government, for a communitarian ethic in corporate governance.

Outputs for Pension Fund Governance & Socially Responsible Investment			
Books	42	Chapters in Books	45 54
Working Papers	77 78 98		

2.7 Ethics, Regulation and Globalisation

Project team: Ian Jones and Michael Pollitt

Period: 1999-2010

During 2010 we completed a working paper suggesting that engaging individuals and changing norms of behaviour will be crucial if substantial decarbonisation is to be achieved and if the full costs of climate change and related development challenges are to be willingly met by societies around the world. Engaging individuals and changing norms fundamentally relate to individual moral values. This brings us to a consideration of how organised religion can play a role in providing the moral basis for individual action in this area. We also suggested implications for how business will need to engage with the challenges posed by decarbonisation. Our discussion links the underlying ethical issues raised by The Economics of Climate Change (Stern, 2007) with Vandenberg's (2005) emphasis on the need for 'personal norm activation' to engage individuals in protecting the environment.

We also completed a major working paper on high street retailers' climate strategies, developing our earlier CBR work on social capital building by multinationals. This work was funded by the ESRC and hosted in the Electricity Policy Research Group. We used a social capital approach to firstly measure best practice in the climate strategies of a sample of 60 companies. We then measured the differences in engagement with partner organisations across the same set of companies. Using our best practice and partnership indices, we investigate how committed companies are to climate strategies; how partnerships have an impact on best practice; and we try to understand the distinction between companies that are more and less highly engaged in partnering. We find that partnership has an important role to play; and specifically that higher levels of partner diversity and greater depth of engagement improve the impact of partnership on best practice.

Outputs for Ethics, Regulation and Globalisation			
Working Papers	75 99	Conferences & Workshop Presentations	190 191
Conferences & Workshops attended or held	231 232 233 234 235 236 237 238 250	Media coverage	274

2.8 Corporate Governance and Innovation

Project leaders: Simon Deakin and Andrea Mina

Research assistants: Mabel Brodrick-Okereke and Ola Polanska

Funding: Japanese Ministry of Education COE grant to ITEC, Doshisha University, and the CBR

Period: 2010-2011

Aims and objectives

The literature on corporate governance ('CG') suggests that a number of features of CG systems could be expected to have an impact on innovation. For example, systems with liquid capital markets tend to have high incidence of venture-capital funded, high technology firms. This is thought to be a consequence of the availability of an exit strategy, via an IPO, for venture capital funds, which in turn presupposes a liquid stock market. It has also been suggested that the availability of venture capital is linked to the ability of shareholders to extract value from listed companies in mature sectors through takeover bids, and redirect it to growing firms in developing ones. If these hypotheses are correct, legal and regulatory mechanisms which support liquid capital markets could be expected to have positive impacts on certain types of innovation, in particular those associated with a high incidence of start-up capital. Laws and regulations protecting shareholder rights, supporting takeover bids, and encouraging hedge fund activism, might all have this effect. However, it would be important to study their possible effects alongside other factors influencing innovation.

A counter hypothesis to the one just set out is that CG systems which strengthen shareholder rights at the expense of employee expectations of job security will undermine incentives for innovation. Takeover bids, for example, tend to benefit target shareholders at the expense of the firm's 'implicit contracts' with employees and suppliers. There is evidence that firms are less willing to invest in R&D when they come under pressure to prioritise shareholder returns through share buy-backs and higher dividends. In addition, it has been suggested that employees denied job security may be more risk averse and less willing to develop innovative ideas with a significant downside risk.

We can study these competing hypotheses empirically by using the legal indices prepared by the CBR as a measure of the strength of legal protection for, respectively, shareholders and workers in different countries as part of the 'Law, Finance and Development' project (<http://www.cbr.cam.ac.uk/research/programme2/project2-20.htm>). The CBR indices provide a unique longitudinal measure of legal change in the areas of shareholder, creditor and worker protection. We currently have data for 5 countries for 36 years (1970-2005) and for 25 countries for 11 years (1995-2005). Using time series analysis, we can compare trends in the legal variables with those in variables measuring innovation rates (such as patent activity). In addition to identifying possible correlations, time series models can be used to determine the direction of causation. They can also control for other relevant variables. We will use the CBR datasets on shareholder protection and labour regulation as the main sources of data for the explanatory or independent variable, and the Community Innovation Survey and other innovation datasets as the main source of data for the outcome variables.

The first steps in the project (summer 2010) have been to complete a literature survey on the relationship between corporate governance, innovation and employment relations, and to carry on the work of constructing the legal datasets (initially by bringing them up to date to 2010). There are no outputs to report as the project started in July 2010.

3. Outputs

(*published or forthcoming after 31 July 2010)

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82. Cosh, A. and Zhang, J. (2010) 'When does "openness" promote innovation: a study of US manufacturing and service sectors' working paper, in progress.
83. Costa-i-Font, J., Courbage, C. and Mina, A. (2009) 'Innovation and health: pathways to new technologies' *Economics of Innovation and New Technology* 18(5): 403-406.
84. Consoli, D., McMeeking, A., Metcalfe, J.S., Mina, A., and Ramlogan, R. (2009) 'The process of healthcare innovation: problem sequences, systems and symbiosis' in J. Costa-i-Font, C. Courbage and A. McGuire (eds.) *The Economics of New Health Technologies: Incentives, Organisation and Financing* (Oxford and New York: OUP).
85. Coutts, K and B. Rowthorn (2009) 'Prospects for the UK balance of payments', CBR Working paper No. 394, December 2009.
86. Deakin, S. (2010) 'Labour law and the legal construction of gender in historical perspective', working paper, in progress.
87. *Deakin, S., Sarkar, P. and Singh, A. (2010) 'An end to consensus? The (selective) impact of legal reform on financial development' working paper, in progress.
88. Deakin, S. and Koukiadaki, A. (2009) 'The capability approach and corporate restructuring: UK sectoral and enterprise-based case studies' UK final report, Capright WP5, December 2009.
89. Dodgson, M., Foster, J., Hughes, A. and Metcalfe, J.S. (2009), 'Systems thinking, market failure, and the development of innovation policy: the case of Australia' CBR WP No. 397, December 2009.
90. Hughes, A. and Mina, A. (2010) 'Patents and SMEs' working paper, in progress; CBR WP series, forthcoming.

91. Konzelmann, S., Wilkinson, F., Forvargue-Davies, M. and Sankey, D. (2009) 'Governance, regulation and financial market instability: the implications for policy' CBR WP No. 392, September 2009.
92. Konzelmann, S., Forvargue-Davies, M. and Schnyder, G. (2010) 'Varieties of liberalism? Anglo-Saxon capitalism in crisis' CBR WP No. 403, June 2010.
93. Koukiadaki, A. (2010) 'The regulation of fixed-term work in Britain' (2010) *Labor Policy on Fixed-term Employment Contracts*, JILPT Report no 9. (Tokyo: The Japan Institute for Labour Policy and Training.)
94. McLaughlin, C. and Deakin, S. (2010) 'Gender inequalities and corporate social responsibility: a role for reflexive regulation?' working paper, in progress.
95. Mina, A. (2009) 'Risk capital and innovation: corporate venture capital' FINNOV Working paper 3.1b
96. Mina, A., Connell, D. and Hughes, A. (2009) 'Models of technology development in intermediate research organisations' CBR WP No. 396, December 2009.
97. Mina, A. (2010) 'Knowledge and the evolving Economy' working paper, in progress; CBR WP series, forthcoming.
98. Njoya, W. (2010) 'Employee ownership in the European company: reflexive law, reincorporation and escaping codetermination' working paper, in progress; forthcoming, CBR WP series.
99. Pollitt, M. (2010) 'Green values in communities: how and why to engage individuals with decarbonisation targets' CBR WP No.398, March 2010.
100. Sanderson, P., Seidl, D., Roberts., J and Kreiger., B (2010) 'Flexible or not? The "comply or explain" principle in UK and German corporate governance' CBR WP No. 407, June 2010.
101. Schouten, M. and Siems, M. (2009) 'The evolution of ownership disclosure rules across countries' CBR WP No. 393, December 2009.
102. Schnyder, G. (2010) 'Varieties of insider corporate governance: centre-right preferences and the determinants of reform in the Netherlands, Sweden and Switzerland' CBR WP No. 406, June 2010.
103. Sharpe, S. (2009) 'Risk capital and innovation: venture capital' FINNOV Working paper 3.1a
104. Singh, A. (2010) 'Globalisation, openness and economic nationalism: conceptual issues and Asian practice' CBR WP No. 404, June 2010.
105. Theyel, N. (2010) 'Extending open innovation throughout the value chain' working paper, in progress.
106. Wennberg, K., Lee, C., Tether, B. and Mina, A. (2010) 'Turning digital: diversification in UK design consulting' Imperial College London (Business School) Working Paper, March 2010; CBR Working paper, forthcoming.
107. Zhang, J. (2009) 'Searching for opportunities: guided vs. experiential process' working paper, in progress.
108. Zhang, J. and Baden-Fuller, C. (2009) 'Brokerage and firm network evolution: the complementary roles of architectural and functional broker' working paper, in progress.

109. Zhang, J., Baden-Fuller, C. and Pool, J. (2010) 'Resolving the tensions between monitoring, resourcing and strategizing: structures and processes in high technology venture boards' working paper, available at SSRN: <http://ssrn.com/abstract=1650069>.

Research and CBR Special Reports

110. Abreu, M., Hughes, A., Grinevich, V. and Kitson, M. (2009), Knowledge Exchange between Academics and the Business, Public and Third Sectors, CBR and UK Innovation Research Centre, available at: <http://www.ukirc.ac.uk/object/report/3221/doc/AcademicSurveyReport%20201009.pdf>.

111. CBR/PACEC (2010), *The Higher Education Knowledge Exchange System in the United States*, A report to HEFCE by PACEC and the Centre for Business Research, University of Cambridge, July.

112. CBR/PACEC (2010), *Knowledge Exchange and the Generation of Civic and Community Impacts*, A report to HEFCE by PACEC and the Centre for Business Research, University of Cambridge, April.

113. CBR/PACEC (2010), *Synergies and Trade-offs between Research, Teaching and Knowledge Exchange*, A Report to HEFCE by PACEC and the Centre for Business Research, University of Cambridge, April.

114. CBR/PACEC (2010), *The Intellectual Property Regime and its Implications for Knowledge Exchange*, A report to HEFCE by PACEC and the Centre for Business Research, University of Cambridge, January.

115. CBR/PACEC (2009), *The Evolution of the Infrastructure of the Knowledge Exchange System*, A report to HEFCE by PACEC and the Centre for Business Research, University of Cambridge, December.

116. CBR/PACEC(2009), *Evaluation of the Effectiveness and Role of HEFCE/OSI Third Stream Funding: Culture Change and Embedding Capacity in the Higher Education Sector Toward Greater Economic Impact*, A report to HEFCE by PACEC and the Centre for Business Research, University of Cambridge.

117. Connell, D. and Probert, J. (2010) *Exploding the Myths of UK Innovation Policy: How 'Soft Companies' and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy* (Cambridge: CBR).

118. Connell, D. (2010) *Scientists are Customers too: How the SBRI can Help Research Councils drive Economic Growth* NESTA Provocation, May 2010.

119. Connell, D. and Probert, J. (2010) *Exploding the Myths of UK Innovation Policy: How 'Soft Companies' and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy*, CBR and EEDA, Feb 2010.

120. Connell, D. (2010) *Scientists are Customers too: How the SBRI can help Research Councils Drive Economic Growth* NESTA Provocation No. 13, May 2010.

121. Cosh, A., Hughes, A., Bullock, A. and Milner, I. (2009) *SME Finance and Innovation in the Current Economic Crisis* (Cambridge: CBR and UK~IRC).

122. Martin, B. (2010) *Rebalancing the British Economy: A Strategic Assessment* Special Report (Cambridge: CBR and UK~IRC), April 2010.

123. Martin, B. (2010) *Rebalancing in the Dark* Special Report (Cambridge: Centre for Business Research and UK~IRC). July 2010.

124. Minshall, T. (2009) *Creating an environment for open innovation*: http://www.ifm.eng.cam.ac.uk/working/briefings/v1n4_ifm_briefing.pdf.

125. Mortara, L., Napp, J., Slacik, I. and Minshall, T. (2009) *How to Implement Open Innovation: Lessons from Studying Large Multinational Companies* (Cambridge: University of Cambridge Institute for Manufacturing).
126. Koukiadaki, A. (2010) special editor for the French sociological journal *L'Homme et la Société*, issue entitled 'The Changing Landscape of Industrial Relations in Britain', forthcoming.
127. Koukiadaki, A. (2010) 'Informing and Consulting Employees: The VIVO Staff Association', *IPA Case Study*, no 1, series 5 (London: IPA).
128. Koukiadaki, A. (2010) 'Statutory Employee Consultation: Five Years On', *IPA Bulletin*, May issue.
129. Koukiadaki, A. (2010) 'The Implications of the Directive 2002/14/EC in Britain', in *Les Cahiers de la Fondation (2009-2010) Impact of the Information and Consultation Directive on Social Dialogue in the Member States: Balance and Perspectives*, no 75-76 (Paris: Europe et Société).

Conference and Workshop Presentations

130. Barnard, C. (2009) 'Collective bargaining and industrial action in the crisis: the case of the Lindsey Oil Refinery dispute' presentation to Capright conference, Cambridge, September 2009.
131. Buchanan, J. (2010) 'Why do boards act differently in Japan and the UK? A focus on shareholder value' presented to workshop at Waseda University, Tokyo, January 2010.
132. Buchanan, J., Chai, D. and Deakin, S. (2010) 'Limits to convergence in corporate governance: the case of hedge fund activism in Japan' presented to REFGOV CG workshop, Brussels, May 2010, and to seminar at Korea University, Seoul, November 2009.
133. Bullock, A. (2010) presentation to 1st year Ph.D. students at JBS, 24 February 2010.
134. Cosh, A. and Zhang, J. (2010) 'Open innovation practices in UK Firms: a survey design' IfM, 24 May.
135. Chai, D., Deakin, S. and McLaughlin, C. (2010) 'Corporate governance, gender equality and family-friendly practices in British firms' presented to REFGOV CG workshop, Brussels, May 2010.
136. Chai, D., Buchanan, J. and Deakin, S. (2010) 'Limits to convergence in corporate governance: the case of hedge fund activism in Japan' presented to REFGOV CG workshop, Brussels, May 2010 and Strategic Management Conference, Rome, September 2010.
137. Chai, D., Deakin, S., Sarkar, P. and Singh, A. (2009) 'Product market competition, corporate governance and legal origin: a theoretical and empirical contribution' presented to Strategic Management Conference, Washington DC, October 2009.
138. Connell, D. (2010) 'The University research treasure cave myth and the low hanging fruit', presentation to UK~IRC workshop on Universities and the Knowledge Economy, in collaboration with the *Cambridge Journal of Economics*, Cambridge, 28-29 June 2010.
139. Connell, D. (2009) Institute for Manufacturing Annual Technology Management Conference, University of Cambridge, September 2009.
140. Deakin, S. (2009) 'Law and financial development: what we are learning from time-series evidence' presentation REFGOV workshop, Universitat Pompeu Fabra, October 2009.

141. Deakin, S. (2010) 'Measuring law: problems and possible solutions' presentation to Center for Law and Globalization symposium, *Measuring Law: How to Get it Right in Real-World Circumstances*, Washington DC, March 2010.
142. Deakin, S. (2010) 'Corporate governance, finance and growth' presentation to *Good Governance and Regulation Leadership Forum*, organized by Central Bank of Nigeria and Nigerian SEC, Abuja, May 2010.
143. Deakin, S., Sarkar, P. and Singh, A. (2010) 'An end to consensus? The (selective) impact of legal reform on financial development' presented to REFGOV CG workshop, Brussels, May 2010.
144. Deakin, S. and Koukiadaki, A. (2009) 'Systemic deliberation, social dialogue and contractual learning: the case of Terminal 5' presented to RT2 High-level Roundtable, Beyond the Social-Civil Dialogue Dichotomy, European Commission, Brussels, October 2009.
145. Deakin, S. and Koukiadaki, A. (2010) 'The capability approach and corporate restructuring: UK sectoral and enterprise-based case studies' presented to Capright WP5 workshop, Brussels, March 2010.
146. Deakin, S. and Koukiadaki, A. (2010) 'Reflexive approaches to corporate governance: the case of Heathrow Terminal 5' presented to REFGOV conference, Brussels, May 2010.
147. Deakin, S. and Wilkinson, F. (2009) 'Labour markets, the financial crisis, and institutional reform' presentation to Capright conference, Cambridge, September 2009.
148. Deakin, S. and Koukiadaki, A. (2009) 'Systemic deliberation, social dialogue and contractual learning: The case of Terminal 5', *4th AmCham Corporate Governance Workshop, American Chamber of Commerce*, Central European University, Budapest, November 2009.
149. Deakin, S. (2010) 'Takeover bids in the UK: legal and regulatory issues', presented to workshop at Waseda University, Tokyo, January 2010.
150. Hamilton, J. (2010) 'East meets west: the role of economic theory in Russia's transition' presented to REFGOV CG workshop, Brussels, May 2010.
151. Konzelmann, S., Fovargue-Davies, M. and Schnyder, G. (2010) 'Varieties of liberalism: Anglo-Saxon capitalism in crisis?' presented to REFGOV CG workshop, Brussels, May 2010.
152. Hughes, A. (2010) 'Growth, innovation and the science base: from cargo cult to industrial activism', Plenary Keynote Address 3rd International Innovation and Enterprise Conference Tsinghua University Beijing 8 July 2010.
153. Hughes, A. (2009) 'Innovation and the "science" base', Cabinet Office Seminar, 23 September 2009.
154. Hughes, A. (2009) 'Innovation policy, university-industry links, open innovation and the new production of knowledge', paper presented at the Symposium at Noors Slott: *Changes of Science and Policy*, 16 October 2009.
155. Hughes, A. (2010) 'The science and research base: activities, interaction and the public good', presentation at the BIS Science and Research Seminar: *Science, The Economy and Society: An Overview of the Research Base and the Role of Government* at BIS, 1 Victoria Street, London, 15 January 2010.
156. Hughes, A. (2010), 'Growth, innovation and the science base: from cargo cult to industrial activism', Joint Economic and Social Research Council and British Academy *Event Does innovation produce economic growth?*, One Great George Street, London, 16 March 2010.

157. Hughes, A. (2010), 'What academics and business want and get from knowledge exchange in the UK', presentation at the *Enabling innovation: creative investments in Arts and Humanities Research policy seminar*, The Work Foundation, 5 March
158. Hughes, A. (2010), 'What academics and business want and get from knowledge exchange in the UK', *RCUK Knowledge Transfer and Economic Impact Group (KTEIG) Meeting*, Medical Research Council, 31 March.
159. Hughes, A. (2010) 'System thinking, market failure and the development of innovation policy: the case of Australia', *International Schumpeter Conference*, Aalborg University, 21-24 June 2010
160. Hughes, A. (2010) 'A vision for UK research and innovation policy' *Modelling Futures: understanding Risk and Uncertainty*, Mellon Sawyer Seminar Series, CRASSH, Cambridge, 28 May 2010.
161. Hughes, A. (2010), 'University-business/community interaction', Presentation at *Round Table Meeting with OECD Secretariat to consider Emerging Themes from the OECD Innovation Strategy*, Imperial College London, 16 February.
162. Hughes, A. and Kitson, M. (2010), 'Knowledge Exchange in the UK: Motivations, Impacts and Constraints', *DIME Workshop: Universities on a Third Mission: External Engagement and Entrepreneurship by Academic Researchers*, Alma Graduate School, University of Bologna – 11-12 February.
163. Hughes, A. and Kitson, M. (2009), *Knowledge Exchange Between Academics and the Business, Public and Third Sectors*, Presentation to HEFCE at Centre Point in London, 14 December.
164. Hughes, A. and Salter, A. (2009), 'Ivory Towers and Bamboo Aeroplanes: The role of University IP in UK (and US) Innovation Systems', *Innovation Summit: The drivers of successful innovation and the appropriation of value*, 8 December
165. Hughes, A. and Salter, A. (2009), 'The role of British universities in creating wealth in the 21st century', *Innovation Summit: The drivers of successful innovation and the appropriation of value*, The Royal Society, London, 8 December.
166. Hughes, A., (2009), 'What Academics and Businesses want from Knowledge Exchange: The Case of the UK', *AURIL 09' Annual Conference*, Bristol, Thursday 8th October
167. Hughes, A. (2009), 'Academic and Business Views of Knowledge Exchange and some potential questions for management practice research', *AIM Management Practices Fellows Launch Meeting*, 30 September.
168. Hughes, A. (2009), 'Knowledge Exchange Between Universities and the Business, Public and Third Sector', *Research Councils UK*, 8 September.
169. Kitson, M with Hughes, A. *Knowledge Exchange between Academics and the Business, Public and Third Sectors*, National Endowment for Science Technology and the Arts (NESTA), London, 20 October 2009.
170. Kitson, M. *Knowledge Exchange between Academics and the Business, Public and Third Sectors,, Making an Impact - Universities and the Regional Economy, Impact of Higher Education Institutions on Regional Economies Initiative Conference*, London, 20 October 2009.

171. Kitson, M with Hughes, A. UK Knowledge Exchange Survey, DIME Workshop, Imperial College, London, 18 November 2009
172. Kitson, M. with Hughes, A. Innovation: the State of Knowledge Exchange Between Academia and the Business, Public and Third Sectors, BIS OECD Innovation Policy Seminar, 16 February 2010.
173. Kitson, M. The myth of the ivory tower: the connectivity of UK academia with the business, public and third sector, Network of Industrial Economists, Nottingham, March 2010
174. Kitson, M. The myth of the ivory tower: the connectivity of UK academia with the business, public and third sector, Higher Education Funding Council for Wales, October 2010
175. Konzelmann, S., Fovargue-Davies, M and Schnyder, G (2010) 'Anglo-Saxon liberal market economies in crisis? The implications for policy and regulatory reform.' Wharton School Conference on Corporate Governance and the Global Financial Crisis, September 2010.
176. Konzelmann, S., Fovargue-Davies, M and Schnyder, G (2010) 'Varieties of liberalism: philosophy of the state and financial market reform.' Philosophy of Management International Conference, Oxford, July 2010.
177. Konzelmann, S., Wilkinson, F., Fovargue-Davies, M. and Sankey, D. (2010) 'Governance, regulation and financial market instability: the implications for policy.' ESRC QUB Institute of Governance (Law School) Seminar: *Re-Engineering the Corporation*. London, March 2010.
178. Konzelmann, S., Wilkinson, F., and Fovargue-Davies, M. (2010) 'Governance, regulation and the financial market crisis.' *European Association for Evolutionary Political Economy*. Amsterdam, Netherlands, November 2009.
179. Koukiadaki, A. (2010) 'Workers' rights to information, consultation and participation', *Annual Conference on European Labour Law*, European Academy of Law, Trier, March 2010.
180. Koukiadaki, A. (2010) 'Labour policy on fixed-term employment contracts in the UK', *10th JILPT Comparative Labor Law Seminar 'Labor Policy on Fixed-term Employment Contracts'*, University of Tokyo, March 2010.
181. Koukiadaki, A. (2010) 'The regulation of fixed-term work in Britain: Empirical and case law developments', *Norwich Law School Seminar Series*, University of East Anglia, Norwich, February 2010.
182. Koukiadaki, A. (2010) 'The reformulation of EC-level employee consultation norms in Britain', *Impact de la Directive Information-consultation sur le Dialogue Social dans les États Membres: Résultats et Perspectives*, Europe et Société, Paris, January 2010.
183. McLaughlin, C. (2009) 'Open coordination or beneficial constraint? The reflexive governance lessons from Ireland and Denmark', paper presented at the Irish Academy of Management Conference, GMIT Galway, September 2009.
184. McLaughlin, C. and Deakin, S. (2010) 'Gender inequalities and corporate social responsibility in a changing world: A role for reflexive regulation', paper presented at the Association of Industrial Relations Academics of Australia and New Zealand (AIRAANZ) Conference, Sydney, February 2010.
185. McLaughlin, C. and Deakin, S. (2010) 'Equal pay and reflexive regulation', paper presented at the International Industrial Relations Association Conference, Copenhagen, July 2010.

186. Milner, I. (2010) presentation to 1st year PhD students at JBS on 24 February 2010.
187. Mina, A., Connell, D. and Hughes, A. (2009) 'Models of technology development in intermediate research organisations' *DRUID Summer Conference*, Imperial College Business School, 16-18 June 2010.
188. Mina, A., Connell, D. and Hughes, A. (2009) 'Models of technology development in intermediate research organisations' *International Schumpeter Conference*, Aalborg University, 21-24 June 2010.
189. Mortara, L., Mills, J., Shawcross J. and Minshall, T. (2009) 'Skills for open innovation' R&D Management Association (RADMA) 2009.
190. Pollitt, M. (2009) 'The ethics of the Stern Review', Association of Christian Economists Annual Conference, July 2009.
191. Pollitt, M. (2009) Judge Business School Faculty Seminar on 'Multinationals and Corporate Citizenship' in Cambridge, May 2009
192. Probert, J. (2009) 'Customer-funded development contracts and the growth and sustainability of high-tech firms' seminar at the University of Adelaide, 4 November 2009.
193. Sanderson, P., Seidl, D. and Roberts, J. (2010) 'Regulation in the age of crisis' European Consortium on Political Research Standing Group on Regulatory Governance Conference, UCD, Dublin. June 2010.
194. Sanderson, P., Seidl, D. and Roberts, J. (2010) 'Reflexive governance, pluralistic compliance, discursive legitimacy ... and flux: applying the 'comply-or-explain' principle in codes of corporate governance' REFGOV conference, Brussels, May 2010.
195. Sanderson, P (2010)'International medical graduates' , International Comparison of Medical Regulatory Systems, Association for the Study of Medical Education, RIBA London.
196. Sanderson, P. (2009) 'International comparison of 10 medical regulatory systems: Egypt, Germany, Greece, India, Italy, Nigeria, Pakistan, Poland, South Africa and Spain', General Medical Council Equality and Diversity Research Forum.
197. Siems, M. (2009) 'The web of creditor and shareholder protection: a comparative legal network analysis' University of Manchester Research Seminar Series, November 2009.
198. Siems, M. (2010) guest lecture on 'Shareholder protection and law & finance', King's College, London, Department of Management, February 2010.
199. Singh, A. (2009), *The world economic and financial crisis*, Cornell University, September at the invitation of the Department of Economics, the Hans Bethe House, the South Asia Program, Cornell Law School, the Program in International Studies in Planning, and the Tolani Senior Professorship in International Trade Policy.
200. Singh, A. made three presentations to lead workshop discussions at Cornell University in September (2009): Singh, A. (2009) *Does fast growth in India and China help or harm US workers?*, Cornell University, September at the invitation of the Department of Economics, the Hans Bethe House, the South Asia Program, Cornell Law School, the Program in International Studies in Planning, and the Tolani Senior Professorship in International Trade Policy,
201. Singh, A. (2009) *Law, finance and development; further evidence from longitudinal data*, Cornell University, September at the invitation of the Department of Economics, the Hans Bethe House, the South

Asia Program, Cornell Law School, the Program in International Studies in Planning, and the Tolani Senior Professorship in International Trade Policy

202. In September 2009 Singh, A. made a first presentation to lead workshop discussions at the University of Massachusetts Amherst at the invitation of the Political Economy Research Institute and the Department of Economics.

203. In September 2009 Singh, A. made a second presentation to lead workshop discussions at the University of Massachusetts Amherst at the invitation of the Political Economy Research Institute and the Department of Economics.

204. Singh, A. (2009) keynote address on 'Economic nationalism' at the Copenhagen Business School at a conference on Globalisation and Economic Nationalism in Asia (December 2009).

205. Singh, A.(2010) keynote address at a conference on 'Recovery or bubble? The global economy today' in New Delhi in January 2010. The conference was organised jointly by the Ford Foundation and International Development Economic Associates (IDEAs).

206. Singh, A, Zammit, A. (2010) 'The global economic and financial crisis: a review and commentary', presented to REFGOV CG Workshop, Brussels, May 2010.[Also in REFGOV]

207. Siems, M. (2010) guest lecture on 'Comparative law and finance', Chiba University, Faculty of Law and Economics, Chiba-shi, Japan, April 2010.

208. Zhang, J., Baden-Fuller, C. and Pool, J. (2010) 'How Early Venture Boards Add Value: an in-depth study of 8 UK High-Technology Ventures', 10-12 June, 2010. Babson College Entrepreneurship Research Conference, IMD& EPFL, Lausanne, Switzerland.

Conferences and Workshops attended or held

209. Cosh , A. and Zhang, J. (2009) Innovation research initiative-distributed projects meeting, NESTA, London, October 2009.

210. Cosh , A. and Zhang, J. (2009) Open innovation meeting with Hi-network, London office, 3 December.

211. Cosh , A. and Zhang, J. (2009) Innovation summit-the drivers of successful innovation and the appropriation of value, London, 12 December.

212. Cosh , A. and Zhang, J. (2010) Innovation research theme meeting, Judge Business School, 19 January.

213. Cosh , A. and Zhang, J. (2010) UKIS user group meeting, BIS conference centre, London, 6 July.

214. Connell, D. (2009) Cambridge University Institute for Manufacturing Annual Technology Management Conference September 2009.

215. Connell D. (2009) EU Workshop on Precompetitive Procurement, Brussels, Oct 2009

216. Connell, D. Conference on the Knowledge Economy, organised by the UK-Innovation Research Centre (UK~IRC) in collaboration with the *Cambridge Journal of Economics*, June 2010

217. Cosh, A. (2010) Hauser Review Workshop, 'The Current and Future Role of Technology and Innovation Centres in the UK', organized at NESTA by BIS, 26 January 2010.

218. Hughes, A., (2009, Cabinet Office seminar on future sources of economic growth London, 23 September.
219. Hughes, A., Salter, A., Cosh, A.D. Kitson, M., (2009), TSB Innovate 09 Conference London, 12 October.
220. Hughes, A., (2009) Royal Academy of Engineering, 'Can the UK generate larger companies?' at 3 Carlton House Terrace London, 2 November.
221. Hughes, A., (2009), Royal Society Fruits of Curiosity study at Royal Society, London, 18 December.
222. Hughes, A., (2010), BIS Seminar Professor Adrian Smith, Director General for Innovation, London, 15 January.
223. Hughes, A., Salter, A., (2010), UK~IRC/TSB Impact Evaluation Workshop, London, 14 January.
224. Hughes, A., (2010), CSaP Inaugural Associate Seminar: How should the policy impact of scientific research be measured?, Cambridge, 27 January.
225. Hughes, A., (2010), CST Launch of Report A Vision for UK Research, Science Museum, London, 1 March.
226. Hughes, A., (2010), Panel Member at BIS Research Strategy Conference, 1 Victoria St, London, 12 March.
227. Hughes, A., (2010), ESRC Policy Event (Keynote Speaker), The Rennie Room, One Gt George St, London, 16 March.
228. Hughes, A., (2010), Lord Rees and Lord Browne Post-Election Science, Engineering and Innovation Summit London, 19 May.
229. Hughes, A., (2010), Modelling Futures: Understanding Risk and Uncertainty, Mellon Sawyer Seminar Series, University of Cambridge, 28 May.
230. Hughes, A. Kitson, M., Salter, A., (2010), BIS OECD Innovation Policy Seminar, London, 15 February.
231. Jones, Ian was a participant in 'Evaluating Recent Research Findings on Historical Patterns of Global Entrepreneurship, Centre for Institutional Performance in conjunction with Centre for International Business History, Henley Business School, Reading, March 2010.
232. Jones, Ian is a Member of IOD Corporate Governance Circle, attending events during 2009 -2010.
233. Jones, Ian attended the St Paul's Institute at St Paul's Cathedral, London, attended session by Niall Ferguson 'Men, Money and Morality, How can trust in banking be restored?' June 2010.
234. Jones, Ian attended a seminar at Wycliffe Hall, Oxford. He participated in pre-lecture expert seminar with Lord Griffiths of Forestffach concerning Christian perspectives of values and conduct in financial services March 2010.
235. Jones, Ian attended Chavasse lectures: 'Markets, money and morals: a vision for capitalism after the crisis' February/March 2010.
236. Jones, Ian was a participant in International Corporate Governance Network Mid-Year conference, London, Guildhall, March 2010.

237. Jones, Ian was part of network attending Corporation of London's City of London Research Conferences themed around London's place in the global economy.
238. Jones, Ian and Michael Pollitt attended the Annual Study Group meeting of the Association of Christian Economists at Sidney Sussex, Cambridge, July 2009.
239. Kitson, M. with Hughes, A. Knowledge Exchange between Academics and the Business, Public and Third Sectors,, National Endowment for Science Technology and the Arts (NESTA), London, 20 October 2009.
240. Kitson, M. Knowledge Exchange between Academics and the Business, Public and Third Sectors,, Making an Impact - Universities and the Regional Economy, Impact of Higher Education Institutions on regional economies initiative Conference, London, 20 October 2009.
241. Kitson, M. with Hughes, A. UK Knowledge Exchange Survey, DIME Workshop, Imperial College, London, 18 November 2009
242. Kitson, M. with Hughes, A. Knowledge Exchange between Academics and the Business, Public and Third Sectors, Presentation to HEFCE, London (with teleconference to Swindon) 14 December 2009
243. Kitson, M with Hughes, A. Knowledge Exchange in the UK: Motivations, Impacts and Constraints, DIME Workshop at Graduate School of the University of Bologna, 11-12 February 2010
244. Kitson, M. with Hughes, A. Innovation: the State of Knowledge Exchange Between Academia and the Business, Public and Third Sectors, BIS OECD Innovation Policy Seminar, 16 February 2010
245. Kitson, M. The myth of the ivory tower: the connectivity of UK academia with the business, public and third sector, Network of Industrial Economists, Nottingham, March 2010
246. Kitson, M. The myth of the ivory tower: the connectivity of UK academia with the business, public and third sector, Higher Education Funding Council for Wales, October 2010
247. Mina, A. (2009) Comparative Analysis of Enterprise Micro Data (CAED) Conference, Hitotsubashi University, Tokyo, 2-4 October 2009.
248. Mina, A. (2010) FINNOV Conference, Sant'Anna School of Advanced Studies, 13-14 May, Pisa.
249. Mina, A. (2010) DRUID Summer Conference, Imperial College London, 16-18 June 2010 (*plenary session*).
250. Pollitt, M. (2009) organized the Annual Study Group meeting of the Association of Christian Economists at Sidney Sussex, Cambridge, July 2009.
251. Probert, J. (2009) University of Adelaide Nov 2009.
252. Zhang, J. and Cosh, A. (2009) Innovation research initiative-distributed projects meeting, NESTA, London, 20 October.
253. Zhang, J. and Cosh, A. (2009) Open innovation meeting with Henry Chesbrough, Imperial college London, 11 November 2009.
254. Zhang, J. and Cosh, A. (2009) Open innovation meeting with Hi-network, London office, 3 December 2009.
255. Zhang, J. and Cosh, A. (2009) Innovation summit-the drivers of successful innovation and the appropriation of value, 12 December 2009.

256. Zhang, J. and Cosh, A. (2009) Strategy and innovation workshop, Cass Business School, City University, London, 16-18 December 2009.
257. Zhang, J. & Cosh, A. (2010) Innovation research theme meeting, Judge Business School, 19 January 2010.
258. Zhang, J. and Cosh, A. (2010) ESRC media and communications training workshop, Centre for economic policy research, London, 9 February 2010.
259. Zhang, J. and Cosh, A. (2010), talks given at Bio-Wednesday workshop, 'Growing Bio-Business', t Cass Business School, City University of London, 10 March 2010.
260. Zhang, J. and Cosh, A. (2010) 'Open for Business' conference at NESTA, 7-8 April.
261. Zhang, J. and Cosh, A. (2010) 'Adopting Open Innovation Practices in UK Firms: A survey design', IfM, Cambridge, 24 May 2010.
262. Zhang, J. and Cosh, A. (2010) UKIS user group meeting. BIS conference centre, London, 6 July 2010.
263. Zhang, J. and Cosh, A. (2009) UK~IRC research conference, Imperial college London, 11-22 June.
264. Zhang, J. and Cosh, A. (2010) DRUID Summer Conference 2010, Imperial College London Business School, 16-18 June.

Media Coverage

265. Connell, D. (2010) Article in *Financial Times* on Myths Report, 15th Feb 2010
266. Hughes, A. (2010) appointment to CST published on Number 10.gov.uk - The official site of the Prime Minister's Office, 20 March 2010.
267. Hughes, A. (2010) March 2010 cited in *BBC News* item, 'UK science "must meet challenge" of emerging nations'.
268. Hughes, A. (2010) cited in *New Scientist*, 'Politicians have been misled by innovation myths', 2 March 2010.
269. Hughes, A. (2010) cited in article *Times Higher Education Supplement*, 'Britannia rules the knowledge-transfer waves', 5 July 2010.
270. Hughes, A. (2010) Judge Business School Website. 'Excellence is future for UK research!' podcast, JBS website, 23 April 2010.
271. Hughes, A. (2010) cited in article in *Times Higher Education*, 'Mixed report card for academy's civic impact', 22 April 2010.
272. Hughes, A. (2010) cited in article, *Times Higher Education*. 'One extreme to the other and everything in-between', 11 March 2010.
273. Hughes, A. (2009), 'Universities, industry and society: the multiple role of higher education in Britain', *Britain in 2010 (ESRC Newsstand Magazine)*, p.33, November.

274. Jones, I. (2010), 'God or Mammon, leader in feature article on 'God or Mammon – room for both? Examination of the business moral compass', *Financial World*, April 2010.
275. Kitson, M. 'University-business contact faces constraints', *Society, Now*, ESRC, Summer 2010
276. Mina, A. (2010) cited in *Research Quarterly*, April 2010
277. Minshall, T. (2009) 'New report on open innovation', *The Manufacturer*, 5 October 2009, http://www.themanufacturer.com/uk/content/9666/New_report_on_open_innovation.
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<http://www.manufacturingmonthly.co.uk/article.cfm?articleid=20028>
280. Minshall, T. (2009), 7 October 2009, 'Guide highlights steps to introduce open innovation', *Technology Transfer Tactics*, 7 October 2009.
<http://www.technologytransfertactics.com/content/2009/10/07/guide-highlights-steps-to-introduce-open-innovation/>
281. Probert, J. and Connell, D. (2010) cited in article in *Financial Times*, 'Call for customer focus to aid R&D spin-offs', by Clive Cookson, Science Editor, 15 Feb 2010.
282. Sanderson, P, (2010) 8 May 2010 Anglia TV News – Election Result in East Anglia – Paul Sanderson – commentary, 8 May 2010.
283. Singh, A. (2009) gave a long interview to RAESON the Danish magazine (equivalent of the UK magazines *The New Statesman* or the *Spectator*) on the subject of the current world economic crisis. Published in Danish on the December 2nd, 2009 issue of the magazine. An official English translation of the article is available on the internet.

Datasets created/Software written

Datasets deposited with the ESRC Data Archive

284. CBR et al. (2010) 'Survey of knowledge exchange activity by UK academics', 2005-2009 (SN6462).
285. CBR et al. (2010) 'Survey of knowledge exchange activity by UK businesses', 2005-2009 (SN6464).

Other datasets

286. Deakin, S., Lele, P., Mollica, V. and Siems, M. (2009) 'Labour Regulation Index - 25 Countries' (in progress).

Training

287. Milner, I. (2010) attended two Qualtrix training courses: beginners and advanced, 24 June 2010.

288. Mina, A. (2010) attended 1 day course for data access and use, UK Office of National Statistics (ONS), London, 26 March 2010.

289. Zhang, J. (2010) Advanced seminar in Entrepreneurship, led by Prof. Scott Shane, Case Western Reserve University 30 June-1 July, 2010.

290. Zhang, J. 'Social Networks and organizations' lead by Prof. Martin Kilduff at Judge Business School, Cambridge University (16 hours, Jan – March 201

Students supervised

Deakin, S. supervised J. Hamilton, 'Russia in transition: a legal and institutional analysis' (Ph.D.).

Deakin, S. supervised V. Mollica, 'The European company' (Ph.D.)

Deakin, S. supervised A. Haldar, 'Rethinking law and development: evidence from land titling and microfinance programmes'(Ph.D.).

Kitson, M. supervised MPhil & PhD Student B de Goei, 'Dynamics of the regional economy: network formation in the Greater South East UK' (M.Phil. and Ph.D.).

Kitson, M. supervised C. Freitas, 'Entrepreneurship in the outermost regions of Europe' (M.Phil. and Ph.D.).

Pollitt, M. supervised A. Brophy Haney, 'Economics of energy demand' (Ph.D.).

Singh, A. supervised A. Satyal, 'Econometric analysis of Indian exports' (Ph.D.).

Singh, A. supervised Nikolas Bonatsos, 'Open innovation and asymmetric partnerships' (M.Phil.).

Singh, A. supervised Harry Bullivant, 'Open innovation and the development of low carbon buildings' (Ph.D.).

Singh, A. supervised Stefan Kouris, 'The role of location in open innovation' (Ph.D.).

Visitors

Professor Mark Dodgson, University of Queensland

Glen Simmons, Ben Fath, Antje Fiedler, University of Auckland

Professor John Foster, University of Queensland

Ramona Meyricke, Ph.D. student in Department of Land Economy, visited Anna Bullock and Isobel Milner on 23 July 2010.

4. Staff

Below is a list of academic and support staff in post between August 2009 and July 2010 (name, research programme(s), grade, and the destination of staff leaving the CBR since that date, where known)

Research Staff

John Buchanan, corporate governance, Research Associate
Anna Bullock, enterprise and innovation, corporate governance, Survey and Database Manager
Dominic Chai, corporate governance, Junior Research Fellow (left January 2010: lectureship, Manchester Business School)
David Connell, enterprise and innovation, Senior Research Fellow
Andy Cosh, enterprise and innovation, corporate governance, Assistant Director
Simon Deakin, corporate governance, Assistant Director
Alan Hughes, enterprise and innovation, corporate governance, Director
Eku Kobayashi, corporate governance, Research Assistant (left December 2009)
Aristea Koukiadaki, corporate governance, Research Fellow (left March 2010: Leverhulme Fellowship, Warwick Business School)
Niall McKenzie, enterprise and innovation, Research Fellow (left March 2010)
Isobel Milner, enterprise and innovation, corporate governance, Assistant Database Manager
Andrea Mina, enterprise and innovation, Senior Research Fellow
Viviana Mollica, corporate governance, Research Associate
Jocelyn Probert, enterprise and innovation, Senior Research Fellow
Samantha Sharpe, enterprise and innovation, NESTA Fellow (left January 2010)
Joanne Zhang, enterprise and innovation, Research Fellow

Administrative Staff

Irmi Hahne, Director's PA
Kate Hansen, freelance secretary (left May 2010)
Philippa Millerchip, UK~IRC Events Coordinator
Sue Moore, Administrative Secretary
Rachel Simpson, Press Officer
Rachel Wagstaff, Secretary
Louis Wenham, Accounts Clerk (employed via University Financial Agency)

Visiting Fellows

Professor Prabirjit Sarkar, Jadavpur University, Kolkata

Short-term visitors are reported under individual projects.

Research Associates

Research associate status may be conferred on project leaders and members of projects who do not otherwise have a position in the CBR, and to former members of the CBR research staff who are still involved in the relevant projects.

This category includes personnel in other University of Cambridge departments as well as from outside the University of Cambridge; these affiliations are indicated below.

The following were research associates in the period 2009-10 (University of Cambridge unless otherwise stated):

Catherine Barnard (Law)
John Buchanan (CBR)
Dominic Chai (University of Manchester)
Brian Cheffins (Law)
Ken Coutts (Economics)
Panos Desyllas (University of Manchester)
Graham Gudgin (Regional Forecasts Ltd)
Paul Guest (Birkbeck, University of London)
Xiaolan Fu (University of Oxford)
Jonathan Haskel (Imperial College)
John Hendry (Birkbeck, University of London)
Ian Jones (Brasenose College, Oxford and London Business School)
Martin Kilduff (Judge Business School)
Michael Kitson (Judge Business School)
Suzanne Konzelmann (Birkbeck College, London)
Aristea Koukiadaki (University of Warwick)
Colm McLaughlin (University College, Dublin)
Bill Martin (former Chief Economist UBS Global Asset Management, member of the Financial Services Consumer Panel)
Viviana Mollica (Queen Mary, University of London)
Stan Metcalfe (University of Manchester)
Barry Moore (PACEC)
Tim Minshall (Cambridge Entrepreneurship Centre)
Wanjiru Njoya (University of Oxford)
Stephen Pratten (King's College, London)
Bob Rowthorn (Faculty of Economics)
Ammon Salter (Imperial College)
Gerhard Schynder (Kings College, London)
Samantha Sharpe (CBR)
Mathias Siems (UEA)
Ana Siqueira (Graziadio School of Business and Management, Pepperdine University)
Ajit Singh (Economics)
Keith Smith (Imperial College)
Bruce Tether (Imperial College)
Hugh Whittaker (Doshisha University and University of Auckland)
Frank Wilkinson (Birkbeck, University of London)

Advisory Board (as of 31 July 2010)

Dr Gerald Avison
Chairman
The Technology Partnership

Dr Steven Brawley
Chief Executive
Joint Industry Board for the Electrical Contracting Industry

Mr Matthew Bullock (Chairman)
Chief Executive
Norwich and Peterborough Building Society

Professor Brian Cheffins
Faculty of Law
University of Cambridge

Dr Andy Cosh
Assistant Director
Centre for Business Research
University of Cambridge

Professor Arnoud De Meyer
Director
Judge Business School
University of Cambridge

Professor Paul Davies
Allen & Overy Professor of Corporate Law
University of Oxford

Professor Simon Deakin
Assistant Director
Centre for Business Research
University of Cambridge

Dame Mary Francis
Non-Executive Director
Aviva plc

Dr Reg Hinkley
Bursar, Christ's College Cambridge
(ex -Chief Executive BP Pension Fund)

Dr Sean Holly
Director of Research
Faculty of Economics, University of Cambridge

Professor Alan Hughes
Director
Centre for Business Research
University of Cambridge

Mr Gareth Jones
HHE
(ex-Managing Director of Abbey National Treasury Services)

Mr Andrew Kilpatrick

Director for Project Design and Appraisal
European Bank for Reconstruction and Development

Dr Ray Lambert
Department for Innovation, Universities and Skills

Mr Ian McCafferty
Chief Economist
CBI

Ms. Kate Nealon
Non-Executive Director
HBOS plc

Dr. Raj Rajagopal
Non-Exec Director, Bodycote Plc, Dyson Plc and W.S. Atkins Plc

Professor Robert Rowthorn
Faculty of Economics and Politics, University of Cambridge

Professor Paul Stoneman
Warwick Business School

Mrs Sue Moore (Secretary)
Administrative Secretary
Centre for Business Research

Committee of Management (as of 31 July 2010)

Professor Brian Cheffins
Faculty of Law
University of Cambridge

Dr Andy Cosh
Assistant Director
Centre for Business Research
University of Cambridge

Professor Arnoud De Meyer
Director
Judge Business School
University of Cambridge

Professor Simon Deakin
Assistant Director
Centre for Business Research
University of Cambridge

Professor Mike Gregory
Director

Institute for Manufacturing
University of Cambridge

Professor Bob Bennett
Department of Geography
University of Cambridge

Professor Andrew Harvey
Chairman
Faculty of Economics
University of Cambridge

Dr. Sean Holly
Director of Research
Faculty of Economics
University of Cambridge

Professor Peter Tyler
Department of Land Economy
University of Cambridge

Professor Alan Hughes
Director
Centre for Business Research
University of Cambridge

Dr Brendan Burchell
Faculty of Social and Political Sciences
University of Cambridge

Professor Robert Mair (Chairman)
Master
Jesus College
University of Cambridge

Mrs Sue Moore (Secretary)
Centre for Business Research
University of Cambridge

5. Performance Indicators

The following Tables contain details of key performance indicators. They are mostly as agreed in the original contract with the ESRC. With the end of core funding, these are no longer binding on the CBR, but we continue to benchmark our performance by reference to them.

A. PUBLICATIONS

<i>Year</i>	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	Jan-Dec 2003	Jan-Dec 2004	Jan 2005-July 2006	2006-07	2007-08	2008-09	2009-10	Total No.
Refereed Journal Papers	26	16	35	24	44	42	38	35	33	33	23	31	28	26	30	464
Books	8	7	9	6	4	5	10	4	7	9	5	8	5	8	3	98
Chapters in Books	31	30	38	41	17	39	37	23	29	9	12	19	8	11	15	359
Other Publications	51	48	55	59	88	72	52	70	52	53	48	17	34	30	57	786
Data Sets (Deposited at the ESRC Data Archive)	0	1	0	-	1	0	5	3	8	3	1	1	0	6	2	31

**Totals shown exclude books, chapters, articles, and papers which were in draft, in press or forthcoming as of 31 July 2010*

B. EXTERNAL DISSEMINATION

<i>Year</i>	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	Jan-Dec 2003	Jan-Dec 2004	Jan 2005-July 2006	2006-07	2007-08	2008-09	2009-10	Total
Conference Papers	48	117	75	77	72	48	54	126	75	112	76	81	100	76	79	1216
Radio and TV	4	12	6	5	20	2	3	3	4	1	1	1	1	0	2	65
Newspapers, magazines, websites	8	17	15	12	32	6	11	11	14	3	13	6	4	1	17	170
Seminars, Conferences attended and Workshops held and attended	7	11	4	27	20	7	22	9	60	24	34	27	60	29	59	400

C. STAFF RESOURCES

Year	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	Jan-Dec 2003	Jan-Dec 2004	Jan 2005-July 2006	2006-07	2007-08	2008-09	2009-10	Total
Research Staff																
1. Individuals	14	16	20	25	21	23	19	21	22	26	25	18	20	18	16	303
2. FTEs†	11.5	13.5	15.5	19	19	14.5	13.5	18.5	14	12.15	17.7	11.6	14.1	11.9	9	214.45
Visiting Fellows and Research Associates																
1. Individuals	33	37	47	99	80	38	45	40	59	59	51	61	58	60	34*	797
Support Staff																
1. Individuals	11	11	12	11	11	10	10	7	8	8	7	7	6	6	7	131
2. FTEs	4	4	5	5	5	4.5	4.5	5.25	4.75	4.75	4.5	4.0	3.6	3.6	4.25	66.30

† Including a notional allocation representing a proportion of the time of the Director and Assistant Directors (0.4 FTE in each case)

* In 2010 the CBR reviewed its research associate list and redefined the category to include continuing substantive involvement in current projects and publications. This led to a reduction in numbers of individuals formerly listed for example as parts of collaborative networks, as well as normal reductions due to retirement etc.

D. FINANCIAL RESOURCES

Year	1994/95 to 1998/99	1999/2000	2000/01	2001/02*	Jan-Dec 2003	Jan-Dec 2004	Jan 2005 - July 2006 **	Aug 06 – Jul 07	Aug 07 – Jul 08	Aug 08 – Jul 09	Aug 09 – Jul 10	Total No
	£	£	£	£	£	£	£	£	£	£	£	£
ESRC Core Funding	2,228,060	438,431	494,660	730,320	530,880	544,219	58,436	0	0	0	0	5,025,006
Other ESRC Funding	379,251	31,525	8,851	83,129	40,793	29,300	79,835	284,103	379,176	319,151	488,684	2,123,798
Funding from Host Institutions	228,358	50,880	52,500	65,625	50,343	57,104	75,955	0	10,915	0	60,000	651,680
Other Funding Total of which:	777,094	218,690	386,294	515,370	350,819	570,867	484,357	263,959	391,708	366,791	479,043	4,804,992
1. OST and other RCs	0	0	0	0	0	10,000	31,217	37,390	74,737	158,106	161,023	472,473
2. UK foundation	378,349	79,163	63,159	200,430	279,768	440,560	204,989	40,592	53,850	33,463		1,774,323
3. UK industry/commerce	42,279	17,661	51,869	60,007	0	0	27,121	5,500	0	0		204,437
4. UK local authority	0	0	0	0	12,000	0	36,050	6,500	25,500	51,375	103,675	235,100
5. UK Central Government	175,981	54,604	134,426	65,802	0	78,360	109,915	102,940	91,711	0	17,262	831,001
6. UK health	0	0	0	0	0	0	12,766	0	0	0		12,766
7. UK voluntary	18,006	0	0	0	0	0	2,056	0	0	0		20,062
8. EU	116,966	461	6,421	28,876	26,662	22,861	19,972	52,890	120,316	95,915	149,195	640,535
9. Other Overseas	45,513	66,801	130,419	160,255	32,389	19,086	40,271	18,147	25,594	27,932	47,887	614,294
Overall Total	3,612,763	739,526	942,305	1,394,444	972,835	1,201,490	698,583	548,062	781,799	685,942	1,027,727	12,605,476

All sums are expressed in £s

*This column relates to a 15 month period due to changes in the required ESRC reporting periods for the Annual Report.

** This column relates to a 19 month reporting period for the reasons explained in the 2005-6 Report

