

Measuring the impact of ESRC funding

A REPORT PREPARED FOR THE ECONOMIC AND SOCIAL RESEARCH
COUNCIL

May 2009

Measuring the impact of ESRC funding

Executive summary	1
1.1 Approach.....	1
1.2 Findings.....	3
1.3 Summary	5
2 Introduction	7
2.1 Background.....	7
2.2 Our approach	7
2.3 Structure of the report	8
3 Conceptual framework	9
3.1 What are we trying to do?.....	9
3.2 What are research centres and what do they do?	10
3.3 Outputs and impacts	11
3.4 Technical issues – counterfactuals and double counting.....	13
3.5 Finding value	14
3.6 Summary	16
4 The Centre for Economic Performance	17
4.1 Introduction.....	17
4.2 Background on the Centre for Economic Performance.....	17
4.3 Policy impacts.....	19
4.4 Research outputs.....	25
4.5 Summary	31
5 The Centre on Skills, Knowledge and Organisational Performance	35
5.1 Introduction.....	35
5.2 Background on Skope	35
5.3 Policy impacts.....	37
5.4 Research outputs.....	40
5.5 Summary	44
6 Conclusion	47
6.1 Policy impacts.....	47

6.2	Research outputs.....	48
6.3	Summary	49
7	References	51
	Annexe 1: Assessment of the Centre for Economic Performance’s policy impacts	52
	Psychological health.....	52
	The New Deal	53
	Clusters and urban sprawl.....	55
	Education	55
	Annexe 2: Valuation methods for the Centre for Economic Performance’s research outputs	56
	Measurement of the value of books.....	56
	Measurement of refereed journal articles	56
	Measurement of the value of discussion papers.....	58
	Measurement of the value of the magazine	61
	Measurement of the value of events	62
	Measurement of PhDs awarded.....	63
	Annexe 3: Valuation methods for the centre on Skills, Knowledge and Organisational Performance	65
	Measurement of books.....	65
	Measurement of refereed journal articles	65
	Measurement of issues papers and newsletter.....	66
	Measurement of datasets.....	66
	Measurement of the value of events	67
	Measurement of PhDs awarded.....	68

Measuring the impact of ESRC funding

Figure 1: Research centre activities.....	11
Figure 2: The transmission mechanism	12
Figure 3: The 2006 hits distribution	58
Figure 4: An example CEP discussion paper “lifecycle”.....	59
Figure 5: Annual hits for papers published across the years 2004-06	60
Table 1: CEP grants	18
Table 2: CEP members	18
Table 3: Impact of NMW on wage bill of those workers whose wages were increased by its introduction and the subsequent upratings. 2008 prices....	23
Table 4: Book output, usage and value (CEP) with and without the pro rata	26
Table 5: Refereed journal articles produced.....	27
Table 6: Citations of CEP articles published in refereed journals 2003 with pro rata.....	28
Table 7: Discussion papers output, usage and volume (CEP).....	29
Table 8: Value and volume data for CEP events for 2006 (Note, this excludes CEE events).....	30
Table 9: PhDs awarded (CEP)	31
Table 10: Case studies on impact (CEP).....	32
Table 11: Case studies (CEP)	33
Table 12: Availability of evidence (CEP).....	34
Table 13: Volume and value (CEP).....	34
Table 14: Skope grants.....	36
Table 15: Skope members.....	36
Table 16: Books output (Skope) with and without pro rata	41
Table 17: Refereed journal articles (Skope)	42
Table 18: Skills Survey (usage).....	43
Table 19: Value and volume data for Skope events for 2006.....	43
Table 20: PhDs awarded (Skope).....	44
Table 21: Case studies on impact (Skope)	44

Table 22: Case studies (Skope).....	45
Table 23: Availability of evidence (Skope).....	46
Table 24: Volume and value (Skope).....	46
Table 25: Top ten journals as defined by Frontier.....	57
Table 26: CEP discussion paper hits.....	60
Table 27: Discussion papers total value under different average value per usage assumptions.....	61
Table 28: CentrePiece total distribution.....	61
Table 29: Events (CEP).....	62
Table 30: Events usage (CEP).....	63
Table 31: Refereed journal articles (Skope).....	66
Table 32: Citations of Skope papers published in refereed journals (2002-03)....	66
Table 33: Skope public events.....	67
Table 34: Events usage (Skope).....	67
Table 35: Skope conferences, workshops, industry forums and other public events.....	68

Executive summary

The ESRC spend on research activity was £106 million in 2007-08. Recently, it has undertaken a programme of work to evaluate the impact its funding achieves and to try to measure the economic value created by the research it pays for. As part of this work programme, Frontier has previously developed an analytical framework for measuring the value of research (Frontier Economics, 2007).

Our earlier study found that it is difficult to measure the economic impact of research on high-level economic factors such as productivity, employment and economic well being. The study recognised the complex interrelationships and uncertainties in the process. However, the study did propose using valuation methodologies that might go some way in developing estimates of the value of different types of research activity.

The key aim of this work has been to test these methodologies on the research practices of two of the UK's leading research centres, the Centre for Economic Performance (CEP) and the Centre on Skills, Knowledge and Organisational Performance (Skope), to identify what in practice can be done to measure value. In particular, we focus on understanding the extent to which we can:

- identify the key outputs of a research centre, the users of those outputs and the value users place on those outputs; and
- understand how the research produced by the centres is used to influence, shape and develop policy and practice in a way that leads to better outcomes for everybody.

1.1 APPROACH

Both CEP and Skope have a strong focus on having an impact on economic policy. The leaders of both the centres told us that the research programmes they pursue are heavily influenced by what they regard as important policy issues. And, the research outputs they produce are communicated in order to have an impact on those policy areas. It is in this context that we have examined the research activities of the two centres and tested whether it is possible to get an understanding of their economic value.

We have made the distinction between *research outputs* (for example, books, journal articles, seminars) that are produced by the research centres, and *policy impacts* (for example, where a centre's research output has been able to influence Government policy and subsequently impact on the economy). The evidence we have drawn on includes a combination of a detailed examination of the administrative data and documents for each centre alongside in-depth interviews with researchers. We have also interviewed policymakers to get an understanding of the policy impacts.

Research outputs

It is important to track information on research outputs as any administrator of public funds needs to know what they are purchasing with those funds and

whether they are receiving value for money. The number of users of research outputs also provides a useful indication of the quality and relevance of what is produced. To get an understanding of the value users place on research, we have tested different valuation techniques on these outputs, including willingness-to-pay techniques and bibliometrics.

Policy impacts

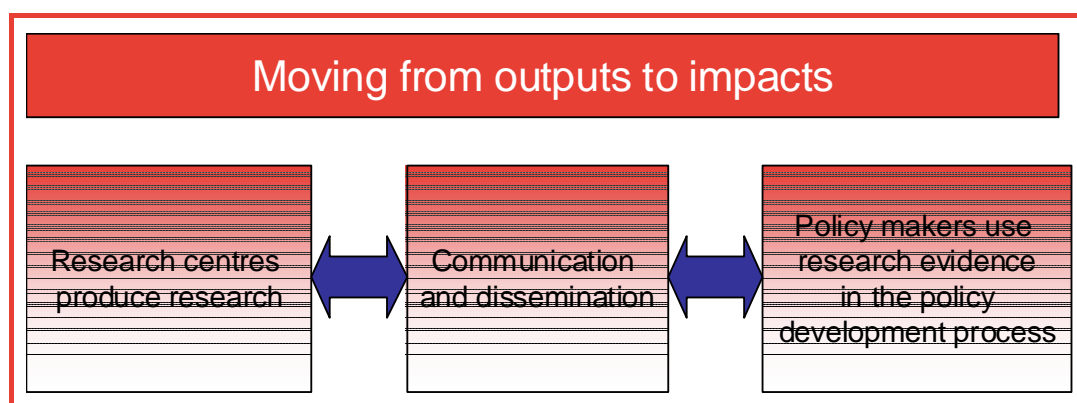
Measuring policy impacts is important in that it may be in this area that a research centre will create the most value. However, we have to be careful when doing so. For example, a centre may produce a highly relevant evidence base which may not be picked up on by the policy process due to factors outside of the centre's control (for example a change in the political landscape). It is important therefore to take a broad view of a research centre's impact on the policy process by examining:

- the extent to which the research centre is targeted at having policy impacts;
- the effectiveness of the transmission mechanism developed by the centre;
- the value generated when centres achieve a 'hit'; and
- the impacts over a period of time, to allow for the fact that the transmission mechanism may take time to fully work through.

From outputs to policy impacts

We have already mentioned the complex interrelationships in research. This arises particularly in the way research interacts with dissemination and communication activities and subsequently with policy development. The relationship is not linear and involves a critical set of feedbacks which are difficult to disentangle.

The following chart provides in a very simplified form an understanding of the relationships between outputs, dissemination and the use of research for policy. We have used this arrangement as a guide in developing our approach to measuring the value of research and policy impacts.



The transmission mechanism

1.2 FINDINGS

In a number of cases we have tested the applicability of applying valuation techniques to research outputs. For example, in the case of books, it was possible to find out how much books sell for and to get sales volumes on an annual basis. On the other hand there are some important research outputs where it was simply too difficult to estimate their value. For example, we have not been able to apply an effective valuation methodology to articles in refereed journals, which are critical research outputs in economic research.

We do think that the research centres could develop more of a focus on the value generated by their research outputs. For example, we believe that more accurate data could be collected on their dissemination activities, such as the number of attendees, details of attendees and information on the time spent by attendees at each event. Further, we think that use of the ‘cost of time’ methodology could allow research centres to get an understanding of the value of their events. Research centres could also collect more systematically, the value generated by book sales, by collecting data from authors on an annual basis.

We have examined a number of case studies from CEP and Skope in relation to policy impacts. The case studies have examined three areas of performance in relation to policy impacts:

- targeted research;
- effective transmission; and
- evidence of value.

Our analysis suggests that both research centres are highly effective in targeting their research at those areas of public policy where there are clear evidence gaps and where its research is likely to generate substantial impacts.

This is complemented by a highly effective transmission mechanism. The centres have cultivated close links with policy makers and officials who are operating in their chosen research areas, and employ a range of dissemination

mechanisms including seminars, workshops, working papers and individual briefings. Policy makers also value their flexibility – in that they are on hand to provide input on an informal basis and the disciplined way in which they produce research in a timely fashion.

In the case of CEP, despite the clear evidence that it interacts regularly with policymakers and we have been told that it has clearly influenced the development of policy, it is difficult to identify quantitative estimates of the value that this generates.

This is due primarily to two reasons:

- policies have typically been developed on the basis of a range of sources and so it is difficult to apportion a particular element of value to the research produced by any one organisation; and
- there is, in general, a lack of good evaluation evidence on the impact of government policies.

However, in the case of the National Minimum Wage (NMW) we have been able to provide some indication of the value generated by CEP research. Of course, it is impossible to attribute with any precision the value generated, but if we start with a gross benefit of £1.2 billion attributed to the policy, then even if only 2% of that gross benefit is attributable to CEP that equates to £24 million in 2008 prices. The ESRC's share, (according to the proportion of CEP revenue they account for) would be in the order of £9.6 million.¹

Like CEP, we find that Skope perform well in relation to targeted research and effective transmission. Their research is clearly policy focused, and they have identified areas for research that are most likely to lead to policy impact in the future. They have also developed an excellent dissemination mechanism, whereby they regularly provide updates on their research findings and the implications for policy development to policy makers in both England and Scotland. Again, it has been very hard to identify quantitatively their economic impact. The most promising avenue appears to be their work in influencing the development of the Scottish Skills Strategy. However, it will be some time in the future before a quantitative impact from that work could be identified.

We should add that we have not been able to assess situations where policy-makers may reject research evidence that they are not favourable to, but is potentially valuable. We also could not estimate the impact on policy of people that have worked in the centres and then gone on to be involved policy-making. The counterfactual is particularly difficult to assess here.

¹ We recognise it is difficult to separate out the proportion of money from the ESRC to CEP. Particularly, as the ESRC money is core to developing the infrastructure for carrying out research while funding from other sources may fund only incremental research activity that is conditional on the core being established. It is unfortunately too intractable to be able to establish the importance of ESRC funding in these terms.

1.3 SUMMARY

We find that standard valuation methodologies can only be applied partially to research outputs of the two research centres, and it was not possible to apply them to critically important outputs, such as refereed journal articles. To get a robust estimate of the impact on policy and its subsequent economic impact, would require more reliable evaluation evidence of policy impacts.

However, using a case study approach we did find it was possible to get reliable evidence from policy makers and other stakeholders on the degree to which research centre activity has influenced policy development. In terms of the wider implications of conducting this type of research it suggests that a case study approach would need to focus on the targeting of research and the effectiveness of the transmission mechanism as indicators of impact.

Our view is that only in exceptional cases is it likely to be able to provide robust quantitative estimates of value generated. The circumstances where such impacts can be identified are where:

- the research centre has been commissioned explicitly to develop evidence on which a policy may be based; and
- a robust evaluation of the policy in question has been undertaken.

Otherwise, future studies will have to rely on pulling together diverse (and often sparse) information to try to give a broad indication of the likely magnitude of value generated.

2 Introduction

2.1 BACKGROUND

In 2007-08, ESRC spending on research was £106 million. This is a significant amount of public funds and it is important that it provides value for money (VFM). As such, the ESRC has embarked on an extensive evaluation programme, of which this study on the economic impact of its research activity is a critical element.

In 2007, Frontier carried out a scoping study which set out a methodological framework for how to assess the economic impact of ESRC's research activity. Our earlier study found that it is difficult to measure the economic impact of such research on high-level economic factors such as productivity, employment and economic well being. However, the study did propose using valuation methodologies that could give estimates of the value of different types of research activity.

The first objective of this study has been to test the degree to which it is possible to apply valuation methodologies on the research outputs of two economic research centres: the Centre for Economic Performance (CEP) and the Centre on Skills, Knowledge and Organisational Performance (Skope). The second objective has been to assess the impact of the research centres' research outputs on the policy process and on the economy.

2.2 OUR APPROACH

Our approach in this study is to test different approaches to measuring the value of research outputs and the impact of research outputs on policy and practice.

Both CEP and Skope have a strong focus on impacting on economic policy. The leaders of both the centres told us that the research programmes that they pursue are heavily influenced by what they regard as important policy issues. And, the research outputs they produce are communicated in order to have an impact on those policy areas. It is in this context that we have examined the research activities of the two centres and tested whether it is possible to get an understanding of their economic value.

We have made the distinction between *research outputs* (for example, books, journal articles, seminars) that are produced by the research centres, and *policy impacts* (for example, where a Centre's research output has been able to influence Government policy and subsequently impact on the economy).

The evidence we have drawn on includes a combination of a detailed examination of the administrative data and documents for each centre alongside in-depth interviews with researchers. We have also interviewed policymakers to get an understanding of the policy impacts.

Primary data gathering was outside the scope of the study.

2.3 STRUCTURE OF THE REPORT

The report is structured as follows:

- Section 2 sets out the analytical framework used to guide the study
- Section 3 and 4 presents key findings in relation to the Centre for Economic Performance and the Centre on Skills, Knowledge and Organisational Performance;
- Section 5 presents our conclusions; and
- The Annexes provide supporting materials on each research centre.

3 Conceptual framework

3.1 WHAT ARE WE TRYING TO DO?

Frontier has been commissioned to analyse the economic impact of two research centres to test out in a practical setting the extent to which measuring the economic impact of social science research is possible.

Wooding et al (2007) and Martin and Tang (2006) have identified the complex interrelationships and uncertainties in the research process. The complexity arises because of the way the different stages of the research process interact and feedback on each other. The uncertainty arises because only a small proportion of research projects are expected to yield substantial benefits, and it is difficult to tell which projects will be successful *ex ante*. For example, the process whereby research leads to impacts, such as higher GDP or improved quality of life, is non-linear and uncertain. The non-linearity arises because of feedback at different stages of the process.

The research outputs produced also tend to be diverse and there is also a variety of means by which researchers may be organised to produce research. Academics organise themselves in different ways so that they can get the benefits from the co-production of knowledge (working together with other academics and non-academics) and the synergies that arise from academics coming together to develop effective research programmes – see Pettigrew (2008).

So, it is clear that developing meaningful measures of value is a difficult task. We must recognise that we are never going to be able to develop a perfect answer. The key aim of this work, therefore, is to use the examples of two of the UK's leading research centres to identify what can in practice be done to measure value. In particular, we focus on understanding the extent to which:

- we can identify the key outputs of a research centre, the users of those outputs and the value users place on those outputs; and
- we can understand how the research produced by the centres is used to influence, shape and develop policy and practice in a way that leads to better outcomes for everybody.

To have a chance of achieving these aims, it is important that we start with a clear analytical framework that guides the work of the study. Below, we set out the main elements of the framework, covering:

- what are research centres and what do they do?
- what outputs do centres produce and how are those outputs turned into impact?
- technical issues – counterfactuals and double counting; and
- how do we value outputs that do not have a price?

3.2 WHAT ARE RESEARCH CENTRES AND WHAT DO THEY DO?

The ESRC has increased the amount of resources going to research centres over the past few years. Often these centres are situated within an existing academic institution. The research centre operates by:

- paying part or all of the academics salary;
- providing funding for research students and/or materials;
- providing funding for long term data collection exercises;
- buying out the teaching of key researchers; and
- providing a contribution to the running costs/overheads of the host institution.

The primary concept of a research centre is to bring together talent and knowledge and provide them with the opportunity to carry out their work over a longer time span. The idea is that by bringing together groups of individuals to focus on similar areas or lines of research, the quality of the research produced will be greater than what might have been produced were the researchers operating entirely independently.

Often, research centres are the crystallisation of existing informal relationships that have developed within the academic community.

What do research centres do?

Bringing researchers together in a dedicated resource setting also allows them to deliver a greater range and diversity of inputs than if they were acting independently. In particular, we tend to see considerably more dissemination activities (for example, newsletters, seminars networking events) being delivered by research centres.

Figure 1 below breaks the key outputs of research centres into:

- core research activities (red); and
- communication and dissemination activities (blue).

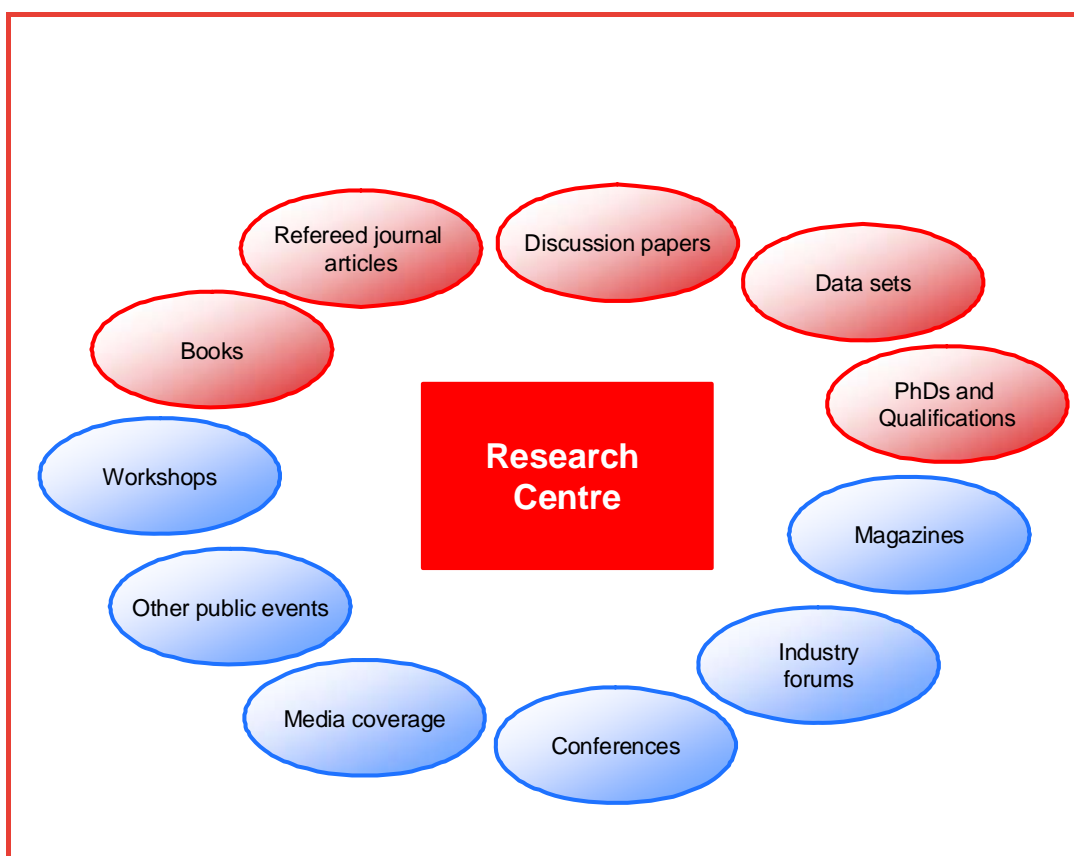


Figure 1: Research centre activities

Implications for the study

There are two main implications of the way research centres are organised for this study. Firstly, because we are looking at institutions and not individuals, we might expect to see a greater diversity of outputs and a steadier stream of research outputs. Secondly, while we know that not all research any individual undertakes will be fruitful, because we are aggregating across a centre, a snapshot of a small number of years is likely to provide a more balanced estimate of the value created than were we focussing on a single researcher.

3.3 OUTPUTS AND IMPACTS

The section above identified the key outputs that a research centre produces. However, it could be argued that the real value of a research centre should not be measured by the number of papers it produces, but rather by how the research it produces is used, and the value that is derived from it. For example, in the case of the two research centres we examine in this study, there is a strong emphasis on their ability to impact on government policy. It follows that a strand of research produced by a research centre could lead to a major shift in a government policy, in which case we would need to determine the value created by the research by evaluating the relevant policy. Clearly, it is unlikely that we will be able to develop quantitative measures of the precise impact of a research

strand. However, case study analysis should allow us to identify the links between research and policy development and test the strength of those links. In this regard, a key element to examine is the transmission mechanism between research and policy. It is also important to identify how policy focused a research centre may be and how much effort is put into strengthening the transmission mechanism.

However, we have already mentioned the complex interrelationships in research. This arises particularly in the way research outputs interact with dissemination and communication activities and subsequently with policy development. The relationship is not linear and involves a critical set of feedbacks which are difficult to disentangle.

Figure 2 provides in a very simplified form an understanding of the relationships between outputs, dissemination and the use of research for policy. We have used this arrangement as a guide in developing our approach to measuring value of research and policy impacts.

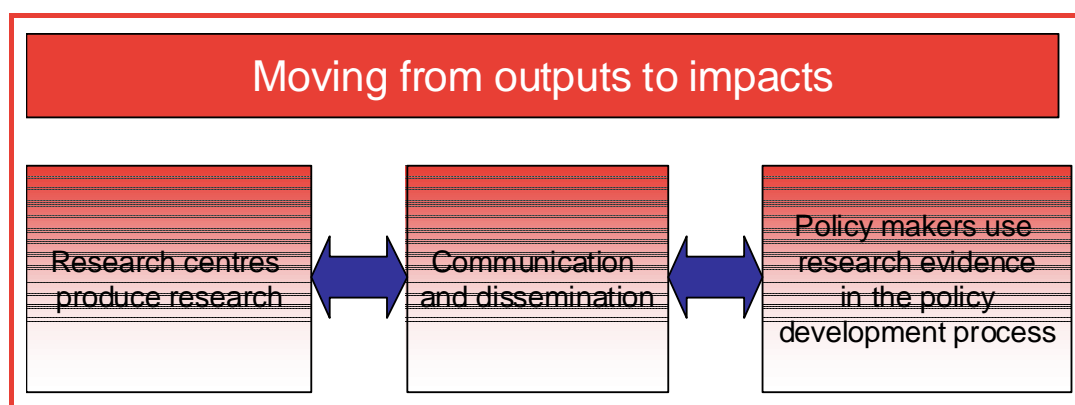


Figure 2: The transmission mechanism

When measuring the value generated by a research centre, we suggest it is valid to look at both the outputs the centre produces and the impact it may have on the development of policy. It is important to track information on research outputs as any administrator of public funds needs to know what they are purchasing with those funds, and whether they are receiving value for money. The number of users of research outputs also provides a useful indication of the quality and relevance of what is produced

Measuring impacts is important in that it may be in this area that a research centre will create the most value. However, we have to be careful when doing so. For example, a centre may produce a highly relevant evidence base which may not be picked up on by the policy process due to factors outside of the centres control (for example a change in the political landscape). It is important therefore to take a broad view of a research centre's impact on the policy process by examining:

- the extent to which the research centre is targeted at having policy impacts;
- the effectiveness of the transmission mechanism developed by the centre;

- the value generated when centres achieve a ‘hit’; and

Implications for study

In terms of the study, the key implications are that it is important that as part of work we focus on measures around research outputs of the centre and policy and practice impacts in terms of focus; hit rate; and impact when a hit is achieved.

3.4 TECHNICAL ISSUES – COUNTERFACTUALS AND DOUBLE COUNTING

When carrying out this type of analysis it is important to be very clear about what it is you are measuring and how the findings should be interpreted. Two key issues that ought to be addressed are:

- The counterfactual – what state of the world are we comparing the work of research centres against?; and
- Double counting – if we are measuring research outputs and impacts might we sometimes be measuring the same thing?

Below we provide a brief description of each issue.

Counterfactual

Evaluation methodologies should only count the net benefits of a publicly funded activity (*The Green Book*, 2003). Key to identifying net benefits is the notion of the counterfactual. In the case of ESRC funding, the counterfactual we must identify is ‘what would have happened in the absence of public funding?’ So, we need to ask what research would have taken place if there was no ESRC funding. For example, we must ask what books would still have been written and which policy impacts would still have taken place absent ESRC funding. The benefits associated with any research that would have taken place in the absence of ESRC funding must then be netted off against the total benefits measured using our approach.

In practice, it will generally be difficult to identify quantitatively what would have happened in the absence of ESRC funding. In these cases it is important to recognise that the measured benefit may provide an upper estimate of the benefits, and to provide a detailed qualitative commentary on the extent to which activities might have been undertaken in a situation in which there was no ESRC funding but was otherwise substantially the same.

Double counting

Research outputs have complex inter-relationships between themselves and policy impacts. This creates the possibility of double counting. For example, if policymakers read journal articles and attend conferences as part of developing a particular policy, then our approach might double count. There is the possibility that we may capture the total value of a research output through one measurement technique and then capture some of its indirect value – through its role as an input to another output – through another measurement technique. If

these two values are summed, part of the value of the research output will have been double counted.

Ideally, it would be possible to trace all the complex interrelationships between different research outputs, and account for potential issues of double counting. In practice, the relationships between research outputs are often too difficult to disentangle. Our response to this is to take a conservative approach to measurement, and to spell out clearly where issues of double counting may arise.

Implications for the study

We need to be aware of both issues. However, it is unlikely to be possible to take account of them quantitatively. Therefore when presenting results and interpreting findings it is important to be clear that we are examining gross benefits, and to identify when double counting may be an issue. It is also important to provide a qualitative commentary on the extent to which the gross benefits should be discounted to allow for the counterfactual.

3.5 FINDING VALUE

There is typically no market price for the outputs of research centres. It is necessary therefore to use a range of techniques that try to tease out estimates of value in a world where prices do not exist. Our reading of the literature has identified three main techniques for valuing outputs and impacts:

- Willingness to pay techniques;
- Bibliometric techniques; and
- Case studies.

We briefly describe each below.

Willingness to pay techniques

Willingness to pay techniques set out to extract information about individuals' willingness to pay for outputs. They can be separated into three categories:

- techniques for directly estimating the demand curve;
- techniques for asking people about the value they attribute to outputs (stated preference techniques); and
- techniques for indirectly inferring the value of outputs from people's market behaviour (revealed preference techniques).

The techniques for directly estimating the demand curve are unlikely to be applicable to ESRC funded activities. They are information intensive and require there to be a market for the output being considered. Stated preference techniques are data intensive, require the design of careful questionnaires, and often have difficulties in interpreting the data (Arrow et al, 1993; Hayden, 1989). To use these techniques to develop estimates of value would require large scale studies with a heavy emphasis on data collection and surveys. Given that this is beyond the scope of this exercise we do not discuss these techniques further.

Revealed preference techniques use information about purchasing decisions made by consumers for goods that are traded in a market to infer the value of the benefits associated with both market and non-market traded goods. These techniques can be useful and we discuss them below.

- **Market price:** If there is a market for a good, the market price multiplied by the quantity consumed at that price is often used as a measure of the economic benefits associated with the good. The simplicity of this measure makes it a useful tool for capturing economic benefit. However, it should be noted that it will understate the true benefits associated with the good. This is because a number of consumers may have been willing to pay more for a good than its market price. Where no market exists for a particular good, it may be possible to use the market price of a similar product combined with an estimate of the volume of usage to provide a measure of economic benefit.
- **Cost of time:** This method uses the time individuals use to access a product as a measure of the value they place on the product. The measures include search time, travel time and costs, and the opportunity cost of the time spent consuming the product. The method can be useful in providing a lower bound estimate of willingness to pay for a good or service.
- **Hedonic pricing:** This method reveals the value of different attributes by analysing the prices paid for purchases that vary only by the amount of the specific attribute they are associated with. The hedonic travel cost method extends this approach. It involves surveying users' travel costs and valuations of the attributes of what they are consuming. They then analyse econometrically how much users are willing to pay for particular characteristics of non-traded goods.

Bibliometric techniques

Citations analysis is a branch of bibliometrics that is a popular means to generate measures of the relative worth of publications. It is also useful when no revealed preference technique is available for measuring value. The most basic metric involves counting the number of citations for a publication over time. A more advanced measure is to look at a paper's Journal Impact Factor which weights the citations that a publication has received depending on when they took place and in what journal.

The drawbacks of citations measures are that they may have limited application for disciplines where journal papers are a less important form of output, and they do not explicitly measure value. Nevertheless, we retain citations analysis as an informative tool for research areas where journal articles are a major output.

Case studies

Case study analysis is best suited to those cases where it is unlikely that quantitative estimates can be developed, or where quantitative analysis on its own would not provide a balanced view of the value being created. The case study approach involves obtaining a detailed breakdown of how an impact is generated via interviews with the stakeholders involved. The findings that result from the

use of case studies tend to be qualitative but may also be numerical. It is possible to ask researchers interviewed to nominate potential users of their research who are then interviewed (Molas-Gallart and Tang, 2007).

Implications for the study

Developing quantitative measures of value is difficult in a world without prices. However, a number of techniques have been developed to try to allow some form of estimates to be developed. When examining the two research centres, we test the practical applicability of those measures that appear most relevant to capturing the value of research centres: these are revealed preference techniques, bibliometrics and case studies.

3.6 SUMMARY

In terms of our methodology, we are focused on examining:

- the economic value associated with the research outputs of a research centre; and
- the value associated with the impact research from a centre may have on the policy development process.

A primary objective of the study is to test the extent to which this type of analysis is possible in a practical setting. So, we provide evidence in relation to each research centre, but also assess more widely the extent to which it is possible to develop meaningful results from this type of analysis.

We test a range of quantitative and qualitative techniques to see how likely it is that they can be utilised in this setting. We are aware of key methodological issues of counterfactual and double counting. While we will account for these in the qualitative assessment of findings, we do not believe it will be possible to account for either issue quantitatively.

4 The Centre for Economic Performance

4.1 INTRODUCTION

This section sets out our key findings from the assessment of the Centre for Economic Performance (CEP). In carrying out the work we have pursued two key aims:

- Aim 1: test out a range of measurement techniques in a practical setting to see which are most likely to be easily applied to measure the value of publicly funded research; and
- Aim 2: to identify where possible the value created by CEP in relation to both outputs and policy impacts.

The section is structured as follows:

- Background on CEP;
- Case study on the value of policy impacts;
- Quantitative evidence on the value of research outputs produced by the research centre; and
- Summary of main findings.

4.2 BACKGROUND ON THE CENTRE FOR ECONOMIC PERFORMANCE

The Centre for Economic Performance (CEP) is based at the London School of Economics and Political Science (LSE) Research Laboratory. The CEP's research falls into six programmes:

- Education and Skills;
- Globalisation;
- Labour Markets;
- Macro Programme;
- Productivity and Innovation; and
- Wellbeing.

Grants received by CEP

The CEP received a core grant from the ESRC of over £1m for each of the years 2004-06. The CEP also received funding from other sources including DfES, the EU, UK government, charitable foundations and business. This takes their total grants for 2004-06 to over £2.5m in each year (not including host funding). Table 1 below sets out the percentage of funding they receive by source. Table 1 shows that in 2004 and 2005 ESRC funding accounted for around 45% of the

Centre's total income. In 2006, this figure increased to 65% of the Centre's income.

	2004	2005	2006
Core ESRC grant (%)	40%	39%	55%
Other ESRC grants (%)	5%	5%	10%
Other grants (%)	55%	56%	35%
Total (£)	2,681,000	2,880,000	2,502,000

Table 1: CEP grants

Researchers employed

Table 2 below gives the number of FTE researchers in CEP. It also breaks the number of FTEs down by those that have been contracted using ESRC funding, and those that have been contracted through other sources of funding. This shows that ESRC funding has resulted in the provision of an increasing number of researchers in recent years, increasing from 7.5 in 2004 to 11.2 in 2006. In 2006 CEP also had a full time data manager paid for through ESRC funding. Additionally, the CEP has a team of administrative staff that help organise the work of the centre.

	2004	2005	2006
ESRC (FTE)	7.5	9.4	11.2
Other (FTE)	28.3	20.6	14.4
Total (FTE)	35.8	30	25.6

Table 2: CEP members

Research focus

Before discussing the assessment in detail, it is worth providing some high level findings regarding CEP's research focus. CEP has an exceptionally strong focus on influencing the direction of public policy both nationally and internationally. It does so by delivering world class researchers who are highly focussed on delivering work of practical relevance.

This is illustrated by the fact that each core research area has research objectives that are grounded in providing answers to practical public policy questions, such as:

- Labour markets – why are there pockets of high unemployment often close to areas of high vacancies?
- Education and skills – how does school competition and parental choice impact on pupil achievement?
- Productivity – how much of the UK’s gap in productivity is due to mismeasurement?

It is also illustrated by the exceptionally strong emphasis CEP place on dissemination activities (see further below).

4.3 POLICY IMPACTS

This section sets out key findings in relation to understanding the impact CEP’s work has had on policy development and the associated value that has been created. More generally, we use the exercise also to assess the extent to which it is possible at all to identify such impacts.

Because of the sheer volume of work pursued and areas of analysis investigated it is necessary for us to be selective in looking at CEP’s policy impact. We began initially with a long list of six broad areas for analysis²:

- the National Minimum Wage (NMW);
- productivity;
- psychological health;
- The New Deal;
- clusters and urban sprawl; and
- education.

From this list we selected two areas to take forward for case study analysis:

- the National Minimum Wage; and
- productivity.

We chose the NMW because it represents a good example of a stand alone policy where CEP research is strongly associated with its development and implementation. As such, if it is difficult to develop evidence of impact for this policy (where it is widely acknowledged that CEP did in fact have substantial influence) then this is likely to suggest that developing evidence of policy impact for any research centre is likely to be difficult in the extreme.

² We have put summaries of the policy impacts of psychological health, The New Deal, clusters and urban sprawl and education in Annexe 1.

Productivity was chosen for slightly different reasons. It is widely acknowledged that CEP has been at the forefront internationally of research into the drivers of productivity. However, there is no single flagship policy or programme that the research can be tied directly to. The challenge in this case, therefore, is to see what evidence of impact can be developed when a body of work is associated with influencing a whole raft of government thinking and policies.

In the remainder of this section we present key findings in relation to each area of research. For each area we:

- provide background on the issues and the policy environment;
- assess the extent to which the research was well targeted at influencing the policy area;
- consider the effectiveness of the transmission employed by the centre; and
- provide evidence on the impact/value created by the research.

4.3.1 The National Minimum wage

In 1997, Labour came into power and reaffirmed their commitment to introduce a minimum wage. Consequently, they set up the Low Pay Commission (LPC) to advise on the level and structure that the minimum wage should take.

The minimum wage was introduced in 1999 on the recommendation of the LPC at a level of £3.60 per hour. Following on from this, the LPC commissioned research to help it decide, amongst other issues:

- whether £3.60 was the right level; and
- whether the minimum wage should be structured as a single wage or whether different groups should receive different wage rates.

In light of the research evidence, the LPC made recommendations to Government which resulted in a series of annual above inflation increases to the minimum wage.

Was CEP's research well targeted?

In the early 1990s there was little evidence on the likely impact of introducing a minimum wage. The main piece of evidence was a research paper by Card and Krueger (1994)³, focusing on the US fast food sector. There is almost unanimous agreement that CEP led the microeconomic research looking at the impact of a minimum wage in the UK. In looking at its contribution, we include the contribution of academics that went on to be part of the CEP when it commenced in 1998. Key CEP research papers from this period include:

³ Card, David and Krueger, Alan B. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *American Economic Review*, September 1994, 84(4), pp. 772–93.

- the 1992 discussion paper examining the impact of the minimum wage on wage inequality (Machin and Manning, June 1992);
- the 1994 discussion paper looking at the agricultural sector (the only UK sector to have a minimum wage since the abolition of the Wage Councils in 1993) which concluded there was no evidence that the minimum wage had a negative impact on employment in the sector (Dickens, Machin, Manning, Metcalf, Wadsworth and Woodland, August 1994); and
- the 1996 special report by Metcalf and Fernie summarising the evidence on minimum wages for Britain.

The work by CEP researchers during this period was critical in countering the view popular amongst many academics and parts of the media that the NMW would have substantial employment effects. They presented research that suggested the employment effects of the NMW would be minimal, while the impact on those benefiting from the policy would be substantial.

Indeed, it could be argued that this research provided the evidence base that the government required in order to be able credibly to introduce the policy.

Was there an effective transmission mechanism?

Once the minimum wage was introduced in 1999, CEP research became critical to informing the LPC on the appropriate level. This research, though new, built on the pre-1999 research mentioned above. There is evidence that the post-1999 CEP research has had an impact in the following three ways:

- volume – CEP research represented around one third of the total volume of research commissioned by the LPC;
- influencing policy – around a dozen members of CEP influenced the recommendations of the LPC. In fact the consensus view is that CEP research was fundamental to the LPC (under Adair Turner) recommending the “ratcheting up” of the minimum wage with above inflation increases over the four-year period 2003-06. One of the LPC’s (non-CEP) commissioners believes that the LPC would have adopted a more cautious approach to increasing the minimum wage and it would probably be lower than it is now, absent CEP research; and
- setting the standard for future research both in terms of quality and methodology.

Whilst there were other significant contributions from outside of CEP – for example Mark Stuart and Joanna Swaffield from Warwick University, Mark Bryan from Essex University and Willy Brown from Cambridge University – the consensus view from LPC commissioners and CEP’s research peers is that CEP research was the most influential in terms of setting the minimum wage level.

In addition to influencing the LPC, CEP staff and their research on the minimum wage also influenced Treasury officials in a number of areas including employment and price effects and how the youth rate should be developed.

Overall, it appears that the CEP was highly effective in ensuring the research it was producing was disseminated appropriately to both the LPC and Treasury officials. In developing multiple contacts with policy officials and providing research that was timely to the relevant economic debate they ensured that their work was central to the development of an entirely new labour market policy in the UK.

Economic impact

Between 2001 and 2004 the minimum wage increased by 31%. This represented a 21% rise over and above RPI inflation. The government has not undertaken a policy evaluation of the national minimum wage. Consequently, there is no reliable independent estimate of the net economic benefits generated by the policy.

However, Table 3 below sets out figures for the number of workers who have benefitted and the impact on the wage bill for each year since the policy's introduction⁴. This shows that over 12 million workers have benefitted from the introduction of the minimum wage. The impact on the wage bill has been between £1.2 billion and £1.4 billion.

Obviously, this data does not take account of the counterfactual – what would have happened to the wages of the low paid in the absence of the national minimum wage. Nor does it take into account any negative effects on employment etc that may have arisen as a result of the policy's introduction.

It is impossible to attribute with any precision the value generated by CEP. However, if we start with a gross benefit of £1.2 billion then even if only 2% of that gross benefit is attributable to CEP that equates to £24 million. The ESRC's share, (according to the proportion of CEP revenue they account for) would be £9.6 million.

⁴ Table 3 uses the DIT's *Employment relations monitoring and evaluation plan 2005* for the figures for the number of workers who benefitted and the impact on the wage bills for 2004 and earlier. For 2005-08 we have used the DIT's Final Regulatory Impact Assessments for each year's uprating which predict the impact of the subsequent wage increase. The wage bill numbers have been converted to 2008 prices.

Year	No. of workers who benefited	Impact on wage bill
1999	1.2m	£1.249bn
2000	1.65m	Minimal
2001	1.1m-1.5m	About £536m
2002	About 1m	Minimal
2003	About 1.3m	£205m-457m
2004	1.3m	£409m
2005	1.3m	Minimal
2006	1.3m	£93m
2007	About 1m	Minimal
2008	About 1m	Minimal

Table 3: Impact of NMW on wage bill of those workers whose wages were increased by its introduction and the subsequent upratings. 2008 prices.

Source: DTP's *Employment relations monitoring and evaluation plan 2005* and the DTT's Final Regulatory Impact Assessments. The wage bill numbers have been converted to 2008 prices.

4.3.2 Productivity

Productivity has been a key issue for government over the last decade. Evidence has consistently suggested that the UK lags behind her main competitors (the US, Germany and France) in terms of productivity. Consequently, both HM Treasury and BERR (formerly DTT) have developed and implemented a range of policies targeted at improving UK productivity.

Was CEP's research well targeted?

HM Treasury regularly quote the productivity gap as being one of the key challenges facing the UK. However, while evidence consistently identified the size of the gap, there was little good evidence on the drivers of UK productivity growth or the reasons for the UK lagging behind.

The CEP's worked has helped to substantially fill this knowledge gap. Productivity is one of the major areas of CEP's research. Aside from general research on productivity (see for example, Nickell, 2002)⁵, CEP has focused on the following areas:

⁵ "Technological Innovation and Economic Performance in the United Kingdom" (with S.Nickell) in Richard Nelson, Benn Steil, and David Victor (eds) *Innovation and Economic Performance*, 2002, <http://cep.lse.ac.uk/pubs/download/dp0488.pdf>

- product market competition and productivity;
- management practices and productivity;
- unions and productivity;
- R&D and productivity; and
- ICT and productivity.

In each of these areas it is widely acknowledged that CEP has provided a substantial element of the evidence base on UK productivity performance and the drivers of that performance.

Most recently, for example, they have identified a link between better management and stronger product market competition, greater trade openness and higher supplies of skill workers. This work is generating substantial interest among policy makers in the UK and elsewhere, and it is likely to shape the future development of productivity policy.

Was the transmission mechanism effective?

CEP's productivity researchers have worked to develop extremely strong links with policy makers in the UK and elsewhere. For example, the findings of the work on management and productivity described above have been presented (amongst others) to:

- HM Treasury;
- The European commission;
- BERR; and
- The Bank of England and ECB.

Briefings have also been provided to Permanent Secretaries and to Downing Street. The strength of the transmission mechanism is also reflected in the views of officials from HM Treasury and BERR. HM Treasury officials commented on the value generated by:

- the willingness of CEP staff to engage on a regular, informal basis with HM Treasury officials;
- CEP's contribution to improving HM Treasury knowledge on productivity through the productivity workshops that CEP deliver on a regular basis to Treasury staff; and
- CEP's ability to deliver high quality academic research to a much tighter time scale than is the norm for most academic research.

Discussions with officials from BERR made it clear that CEP research is highly valued by the department. CEP research is seen as one of the best sources of high quality, policy relevant research. BERR estimate that CEP generates 50% of BERR's research evidence. CEP's contribution was described as either a catalyst for further research in a particular area, or as an important part of the analytical

evidence base. As well as the quality of their advice, BERR values CEP for the ways in which it can disseminate its research. Journal articles and research papers clearly form an important part of the evidence base. In addition, CEP's willingness to engage regularly on a more informal basis is also valued. In particular, one senior BERR policy maker remarked on CEP's willingness to be on hand to offer advice and, where required, to act as an independent voice.

Economic impact

Overall, discussions with CEP and government officials made it clear that it is very difficult to trace the impact of CEP's research through to any single policy initiative. Rather CEP's research has been valuable in helping to shape the direction of analysis and research and has been used in support of a wide range of HM Treasury and BERR backed policies.

One area where it may prove possible to get a handle on impact is in relation to R&D tax credits. CEP researchers were heavily involved in the development of R&D tax credits (although the initial work was undertaken when they were working elsewhere).

Subsequently, CEP has had impact through preventing damaging changes to the R&D tax credit scheme. After the introduction of the scheme it was thought to be too favourable to large companies (for example, in the pharmaceutical sector). However, CEP researchers argued against changes to the scheme through monthly talks with HM Treasury and through working papers. This suggests that if in the future an evaluation of the programme were to be undertaken, it would be possible to link some of the benefits back to CEP research.

4.4 RESEARCH OUTPUTS

This section examines the extent to which it is possible to quantify the impacts associated with the research outputs produced by CEP. Given the scope of the study, we prioritise examining those outputs which provide the greatest scope to test the extent to which measurement of outputs is possible in a practical setting.

Specifically, we examine:

- books;
- journal articles;
- discussion papers;
- conferences and workshops; and
- capacity building.

For each output in turn we set out:

- a description of what is produced;
- volume estimates;
- value estimates (where possible); and

- issues in measurement.

A full description of the methods used for each output is provided in Annexe 2.

4.4.1 Books

Each year, researchers from CEP will bring together a strand of research and publish it as a book. In the past some of these have gone on to attract relatively large audiences, such as *Happiness: Lessons from a New Science* by Layard (2005) which sold over 100,000 copies and *Ozonomics* by Charlton (2007) which has sold 14,000 copies to date.

We note that many CEP books are co-authored and involve a non-CEP author. We account for this by applying a pro rata to books output, volume and usage that reflects the proportion of each book that was produced by the CEP and was ESRC funded.

Volume and value estimates

Table 4 below provides the available information on volume and value associated with CEP produced books. As can be seen, only complete data could be generated for 2005. Even in this case information on sales and value was missing for one book.

	2004	2004 after pro rata	2005	2005 after pro rata	2006	2006 after pro rata
No. books published	2	1.1	4	2.5	3	1
Usage (Sales)	No data	No data	134,500*	121,000	No data	No data
Value (Revenue)	No data	No data	£1.5m*	£1.3m	No data	No data

Table 4: Book output, usage and value (CEP) with and without the pro rata

*missing information for one book

When interpreting the findings, the following should be borne in mind:

- The pro rata numbers for 2005 are the most appropriate as they take account of CEP contribution to the published books;
- The numbers may underestimate usage and value because we do not have information on library or Google Book usage or value figures; and
- The value figures represent what consumers paid for the books, rather than the value they received from them, and might therefore be considered a lower bound.

Methodology issues

In terms of methodology we identified the following for future studies:

- Typically, one must rely on the author for sales and revenue figures – it would be helpful if the research centre could collect these systematically.
- It is difficult to account for library and internet usage and value – this could only be captured by a specific survey. The costs of such a survey are likely to outweigh the benefits of the more precise information generated.
- We cannot estimate future sales and revenues – going forward, it will be important to capture sales and revenue figures on a yearly basis to provide some indication of the likely lifecycle sales these types of book generate.

We should make clear that books are not the primary way that academic economists get their work into the public domain. This is mainly through refereed journals. Obviously, this approach is more relevant to disciplines that rely more heavily on books to publish their research.

4.4.2 Refereed journal articles

Research papers in refereed journals are a core output of a research centre. CEP has a strong publications track record and regularly publishes articles in the leading economic journals.

Below we set out the information available on the volume and value of research papers produced by CEP. Again, we note that many CEP journal articles are co-authored and involve a non-CEP author. We account for this by applying a pro rata to output, volume and usage that reflects the proportion of each journal that was produced by the CEP and was ESRC funded.

Volume information

Table 5 below sets out the number of journal articles produced by CEP each year between 2003 and 2006. This shows that over the period almost 200 refereed journal articles have been produced.

	2003 (after pro rata)	2004 (after pro rata)	2005 (after pro rata)	2006 (after pro rata)
Refereed journal articles	50	58	41	47

Table 5: Refereed journal articles produced

Ideally, we would like to know how many people read each of these research papers. However, this data does not exist:

- there is no good central source of downloads – which are considered to make up a substantial proportion of readers; and

- there is no way to account for library readership or other forms of multiple readership.

The only measure that is available is citations – the number of times a piece of work is cited in another paper. To do so, we used the ISI Web of Science citation tracker and examined those journal articles published in 2003. Using 2003 publications gives us the best opportunity to fully track citations.

Table 6 below provides the number of citations broken down into top ten, top 30 and all refereed journals. This shows that 2003 articles have been cited slightly more than 5 times on average.

Class of journal	Number of citations
Top ten economics journals	19
Top 30 economics journals	54
All refereed journals	256

Table 6: Citations of CEP articles published in refereed journals 2003 with pro rata

Source: ISI Web of Knowledge data, Frontier analysis

CEP's annual report provides findings from REPEC, a similar citation tracker. This shows that, across all of CEP's published papers, they have achieved a citation rate of 7.8 on average. This puts the series sixth in the world of the 67 participating institutions.

Value information

We were unable to develop any useful evidence in relation to the value associated with refereed journal articles.

Methodology issues

It is surprisingly difficult to identify how many people read any particular journal article, or to identify what value they may place on it. There is little additional information that a research centre could collect in order to develop better evidence. Rather, to investigate the volume and value figures further for this output would require a bespoke survey. The survey would need to identify a representative paper or papers, track usage and use a survey to try to get a measure of value.

In the meantime, citations provide a reasonable indicator of research quality. Moreover, they are particularly helpful for providing rankings of relative positions of different institutions.

4.4.3 Discussion Papers

The CEP regularly produces discussion papers. These are disseminated primarily through the website. There is some danger of double counting, as discussion papers will tend, in some form, to become fully refereed published papers.

Volume and value data

The CEP collects extensive data on downloads of discussion papers from their website for the years 2003-07. This provides the main material for estimates of usage volume and usage value.

Table 7 below provides a summary of the number of discussion papers produced and the total number of ‘hits’ per year. This shows that CEP produced over 250 papers during the period and generated hits of over 800,000.

	2004	2005	2006
No. discussion papers	78	83	94
Usage (hits to date)	362,785	288,136	267,946
Estimated value (value estimated at £3)	£1.1 m	£0.9 m	£0.8 m

Table 7: Discussion papers output, usage and volume (CEP)

The CEP does not charge for its discussion papers, and so we have had to develop an estimate of value. To do so, we used two methods:

- **Comparative pricing** – the Centre for Economic Policy Research (CEPR) charges £3 for its discussion papers; and
- **Cost of time** – we used the average hourly wage of £16 and assumptions about the amount of time different users spent reading articles. This generated a user value of £5.

We present the findings using the lower estimate of value above.

Methodology issues

The key issue to address is that the discussion papers are provided free of charge, and so an estimate of value must be generated. We have made estimates using the best information available. However, the accuracy of these estimates could be improved by:

- A survey of users asking them to value the material they download; or
- A survey of users asking them to estimate the amount of time they spend reading the downloaded material. The survey could also ask about user characteristics in order to better calibrate the hourly wage used.

We would suggest the latter might be more appropriate because direct surveys of user value are notoriously hard to develop without substantial bias.

4.4.4 CEP events

CEP arranges a number of public events annually. These include:

- conferences and lectures;
- workshops; and
- industry forums.

Volume and value data

Table 8 presents information for 2006 on the events held by CEP. Specifically, it shows the number of events held, the estimated attendance at those events and an estimate of the value generated by the events. Approximately 3,500 people were estimated to have attended events. The value of their attendance was estimated to be £110,000 (see below for methodology), which works out at just over £30 per attendee.

	Number of events	Estimated Attendance	Estimated Value
CEP Events 2006	23	3,500	£110,000

Table 8: Value and volume data for CEP events for 2006 (Note, this excludes CEE events)

The hard data available on attendance at CEP events and the value generated by those events is limited. Full attendance records are not kept, and so attendance figures have had to be estimated. Similarly, CEP events are free of charge, and so estimates of value have also been estimated.

The estimated figures in the table above have been developed using the following assumptions:

- For conferences, we used the estimated figure of 400 attendees per conference, which reflected CEP's estimate of average attendance. We did not use attendee lists as these were not available for all events and were not complete – they only covered those attendees invited to the after-dinner speech;
- For other events we used attendance lists, although as CEP did not feel there was an appropriate average attendance at such events, as such this may underestimate actual attendance;
- To get an estimate of value we used a cost of time methodology. We used attendee list to provide a broad characterisation of attendees into different wage rates. We combined the wage rate with an assumption of two hours per event to calculate an implied value for CEP events.

Methodology issues

The evidence developed in relation to CEP events has been based largely on estimates, because little actual evidence of attendance or value was available.

However, if data collection were better, it would be relatively straightforward to at least capture volume measures of attendance.

Generating value measures will have to rely on some form of estimation as the events are held free of charge. We suggest that the cost of time methodology should provide a reasonable approximation of the value generated.

So, to generate better estimates in future, we suggest the following should be collected:

- full attendance lists for all events;
- information on attendees including occupation and distance travelled to attend; and
- information on the length of each event.

4.4.5 PhDs awarded

CEP typically has over 30 members each year undertaking research towards a PhD. Table 9 below summarises the number of PhDs awarded for the example years 2004 to 2006. Those who have completed PhD go on to a variety of destinations across academia (European and US universities), the public sector (for example, the Bank of England and the Home Office) and international organisations (for example, the World Bank and the United Nations Development Agency).

	2004	2005	2006
PhDs awarded	6	9	5

Table 9: PhDs awarded (CEP)

We have not been able to develop any information on the value associated with PhD degrees awarded by CEP.

Methodology issues

Almost all organisations collect volume measures such as the number of PhDs awarded. In terms of value, there is extensive research looking at the returns to different qualifications. It is unlikely that the effort involved in developing more specific measures of the return to a particular qualification from a particular research centre would add substantially to the knowledge base.

4.5 SUMMARY

Below we provide a brief summary of key findings regarding the extent to which we could generate measures of value produced by the Centre for Economic Performance (CEP). This is broken into:

- value associated with policy impacts; and
- value associated with research outputs.

Value associated with policy impacts

Table 10 below sets out a summary of what it was possible to measure in relation to each of the case studies on policy impact. We were able to find good qualitative evidence of impact in relation to both case studies. It was possible to generate an estimate of value for the impact of CEP's national minimum wage, but even this was based on relatively strong assumptions.

Case study	Qualitative evidence of impact	Quantitative evidence of impact
National Minimum Wage	Yes – based on wide ranging interviews with researchers and policy officials	Limited – only likely to be able to do so where: 1) the research centre has been commissioned explicitly to develop evidence on which a policy may be based; and 2) a robust evaluation of the policy in question has been undertaken.
Productivity research	Yes – based on interviews as above.	No – hard to link explicitly to a policy. Hard even to get an estimate of magnitude.

Table 10: Case studies on impact (CEP)

Table 11 below sets out our findings in relation to the evidence of impact generated in relation to each case study. In order to provide a balanced view of impact achieved, Table 11 breaks the evidence down into three categories: well targeted research; effective transmission mechanism; and estimated level of impact.

As can be seen from Table 11 it is clear that CEP has had a substantial impact on policy in both case studies. They score extremely highly in terms of the targeting of research to have a policy impact, and they have also developed an exceptionally good transmission mechanism. Their estimated level of impact is high, but it is difficult to quantify this. For the National minimum wage, a very conservative estimate of impact would be approximately £9.6m.

Case study	Well targeted research	Effective transmission mechanism	Estimated level of impact/value generated
National minimum wage	<p>Key provider of evidence on the potential impacts of national minimum wage.</p> <p>Widely acknowledged as leading provider of research on this topic</p>	<p>Provided research that was timely to the development of policy</p> <p>Put substantial effort into disseminating findings</p> <p>Became a trusted advisor to the Low Pay Commission (key decision making body)</p> <p>Became a trusted advisor to HM Treasury</p>	<p>High – work is likely to have substantially influenced both the design and level of the minimum wage</p> <p>Work was also critical in the series of above inflationary increase in the minimum wage</p> <p>Hard to get robust or accurate quantitative estimate – but on very conservative assumptions at least £9.6 million</p>
Productivity	<p>Widely acknowledged as leading provider of research on this topic</p>	<p>Provided research on a wide range of productivity issues that are policy relevant</p> <p>Key advisor to HM Treasury BERR and the Bank of England</p> <p>Provide regular productivity workshops for HM Treasury</p> <p>Estimated to account for around 50% of BERR evidence base on productivity</p>	<p>Likely to be high</p> <p>Hard to link to any specific policy</p> <p>Considered to have influence a broad spectrum of productivity policy</p>

Table 11: Case studies (CEP)

Value associated with research outputs

Table 12 below sets out the extent to which it was possible to develop qualitative and quantitative measures of value. As can be seen, there are a large number of outputs for which it is possible to develop volume measures. Value measures were more difficult to identify, but again there were a number of areas where it was possible to develop estimates.

Type of outputs	Output measures	Volume measures	Value measures
Books	Yes	Sales volumes (for 2005, but incomplete)	Sales revenues (for 2005, but incomplete)
Refereed journals	Yes	Citations (all papers)	
Discussion papers	Yes	Website downloads	Estimated – comparator pricing
Conferences and workshops	Yes	Estimated – average attendees	Estimated – cost of time method
Capacity building	Yes	No. of PhDs	

Table 12: Availability of evidence (CEP)

Table 13 below shows estimates of volume and value. For a typical year this shows that at least 400,000 individuals bought or downloaded CEP produced material, while 3,500 people attended CEP events. These research outputs for which we could estimate value generated at least a value of £2.3 million in a year.

Type of outputs	Output measures	Volume measures	Value measures
Books	2.5 books (pro rata ESRC funding)	Sales of 121,000 in 2005	£1.3m in 2005
Refereed journals	196 journal articles (2003 to 2006)	256 citations (for papers produced in 2003)	None
Discussion papers	255 papers (2004 to 2006)	288,000 downloads from website in 2005	£0.9m in 2005
Conferences and workshops	23 events in 2006	3,500 attendees at 2006 events	£110,000 (2006)
Capacity building	20 PhDs awarded (2004 to 2006)	9 in 2005	

Table 13: Volume and value (CEP)

5 The Centre on Skills, Knowledge and Organisational Performance

5.1 INTRODUCTION

This section sets out our key findings from the assessment of the Centre on Skills, Knowledge and Organisational Performance (Skope). In carrying out the work we have pursued two key aims:

- Aim 1: test out a range of measurement techniques in a practical setting to see which are most likely to be easily applied to measure the value of publicly funded social research; and
- Aim 2: To identify where possible the value created by Skope in relation to both outputs and policy impacts.

The section is structured as follows:

- Background on Skope;
- Case study on the value of policy impacts;
- Quantitative evidence on the value of day-to-day outputs produced by the research centre; and
- Summary of main findings.

5.2 BACKGROUND ON SKOPE

Skope commenced operations in October 1998, based jointly at the universities of Oxford and Warwick. Skope's focus is on understanding the links between the acquisition and use of skills and knowledge, product market strategies and performance.

Skope's current research programme is broken into a number of themes:

- **Theme A:** Models of competitive advantage, Organisational Performance and Managerial Capabilities;
- **Theme B:** Workforce and workplace Development;
- **Theme C:** Design and Operation of the Vocational Education and Training System and the Political Economy of Skill.

Grants received by Skope

Table 14 below shows the total funding received by Skope, and the proportion of that funding contributed by the ESRC. The ESRC is the main funder of Skope's activities, contributing between 50 and 75% of Skope's activities over the period.

	2004	2005	2006
Core ESRC grant (%)	61%	76%	50%
Host institution funding (%)	9%	12%	8%
Other funding (%)	30%	12%	41%
Total (£)	800,000	630,000	940,000

Table 14: Skope grants

Skope researchers

Table 15 shows the number of researchers employed by Skope over the period. This shows that Skope operates with a small core of research staff, backed up by a large network of associate researchers, many of whom do not receive ESRC funding through Skope.

	2004	2005	2006
Core staff	7.45	7.45	8.45
Associate research fellows receiving funding from Skope or HIC	6	12	12
Other associate research fellows	70	61	72
Total	92	86	95

Table 15: Skope members

Core staff data supplied directly by Skope - 'Staff Employed' data in the Annual Reports showed 16, 13 and 11 for 2004, 2005 and 2006.

Policy focus

As with CEP, Skope is highly focused on influencing the direction of public policy. The research centre's core research is in relation to skills, and in particular in relation to an analysis of the demand for skills, and how best skills and learning can be supplied.

The centre has worked hard to develop links with key policymakers within its research area, and has presented work in the UK to:

- Key government departments including HM Treasury, BERR, the Home Office and DIUS;
- The main bodies responsible for the Further Education sector – the Learning and Skills Council, the Learning and Skills Development Agency and the Learning and Skills Research Centre; and
- Scottish Enterprise.

5.3 POLICY IMPACTS

This section sets out key findings in relation to understanding the impact Skope's work has had on policy development and the associated value that has been created. More generally, we use the exercise also to assess the extent to which it is possible at all to identify such impacts.

Skope have been active in trying to influence the direction of skills policy across the UK. Given that the direction of travel of skills policy in England and Scotland is quite different, we consider the impact Skope has had on each separately.

In the remainder of this section we present key findings in relation to skills strategy impact in England and Scotland. For each area we:

- provide background on the issues and the policy environment;
- assess the extent to which the research was well targeted at influencing the policy area;
- consider the effectiveness of the transmission employed by the centre; and
- provide evidence on the impact/value created by the research.

5.3.1 Skills strategy in England

The UK published its interim report of the Leitch Review of Skills in late 2005. One of the key recommendations of the review which was adopted by the government was the need to increase the skills levels of people working in the UK. In particular, it advocates that the UK become a world leader in skills by 2020, benchmarked against the upper quartile of the OECD. This requires a doubling of attainment at most levels of skills. Overall, therefore, the skills strategy for England could be described as primarily supply push, with a concerted effort to increase substantially the supply of skills in the UK.

Was Skope's research well targeted?

Skope's research in relation to the skills strategy for England can be broken into two elements:

- a critique of the current approach to skills policy; and
- focus on previously under-researched areas such as the role of management and leadership skills, the interaction between supply and demand of skills and the institutional structure required to improve the impact of skills.

Skope have perhaps provided the leading critique of the current skills policy for England. Skope's main argument is that a supply push skills strategy will be ineffective in raising economic performance. They use research on low wage work to argue that many individuals are over-qualified for jobs and have little prospect of progression. They also have developed evidence suggesting that employers have little interest in using the latent capabilities of their workforce, either to improve product quality or productivity.

In terms of targeting their research to have an impact, it is clear that Skope have positioned themselves as a critic of the current approach to skills policy, and so this strand of research is likely to have the prospect of impacting on the future development of skills.

Their other areas of research examine areas of skills policy that have previously been under-developed. These include areas such as the role and importance of management and leadership skills. In these areas, Skope is widely acknowledged to have provided evidence to fill important gaps in the skills evidence base. Again, therefore, their research has been well targeted at areas that have the potential to influence the direction of policy.

Is the transmission mechanism effective?

We must divorce the question of whether Skope's research has been acted upon, from that of whether they have ensured that policy makers are aware of the findings of their work.

In terms of the latter, Skope have developed a very effective transmission mechanism. From interviews with a range of policymakers, it is clear that Skope are very effective at disseminating the findings of their work to policymakers including:

- key government departments;
- the Leitch review;
- senior advisors to the Prime Minister; and
- a variety of skills bodies including the LSC, UK Commission for employment and Skills and a range of sector skills councils.

They target policy makers through a range of channels, including:

- research papers and issues papers;

- conferences and other events; and
- face to face meetings with policy makers and officials.

Has the work had an impact?

Skope and policy officials have differing views on the extent of impact Skope's work has had. Skope's internal view is that they have not successfully changed the direction of skills policy in England, and so therefore they have had little impact on policy.

However, policymakers put forward a far more favourable view of the impact Skope has had:

- they are acknowledged to have influenced key areas of the Leitch Review including the Leitch recommendations in relation to management and leadership skills and the future (enhanced) role for the sector skills councils and the UKCES;
- their research was part of the evidence used to provide extra funding for management and leadership training under Train to Gain, the Government's flagship employer based training programme; and
- they provide an important oversight and challenge role by advocating alternative positions in relation to skills.

Clearly, from the description above it is difficult to place an economic value on the impact that Skope has had in relation to skills policy in England. This again comes down to the fact that it is hard to link skills research to any one specific policy or programme. Rather, they are seen as providing an important element of the evidence base that goes into the development of skills policy as a whole.

The area where one might get closest to develop such measures is in relation to the additional Train to Gain funding. However, this policy has not yet undergone a complete evaluation, and even were it to do so, it is not clear that it would be possible to develop evidence of impact separately for different elements of the programme.

5.3.2 Scottish skills strategy

Unlike in England, the Leitch review findings have not been implemented by the Scottish Government. Rather, the Scottish Government has developed its own skills strategy, and more recently, looked to develop the policy levers required to implement that strategy.

Was the research well targeted?

As described above, Skope's research can be broken into two elements:

- A critique of traditional approaches to skills strategies – Skope developed evidence to show that a key issue for Scotland is that it has spent proportionally far more on education than England, and has a better qualified workforce as a result. However, this has not translated into higher wages or enhanced relative productivity;

- An alternative approach to developing skills based on supplying the skills that are really needed; stimulating further demand for skill; and ensuring that skill, once created, gets used to maximum productive effect.

Skope's research has been particularly well targeted at those economies where traditional approaches to skills strategy are perceived to have failed to deliver economic performance. In particular, Skope has been in the lead in providing evidence that traditional supply led models may not translate into improved economic performance. Their research has also played a critical role in developing an alternative strategy.

An effective transmission mechanism?

Like in England, Skope has been very effective in disseminating its research findings to Scottish policy makers. Indeed, its work in this area has gone beyond what it achieved in England, with senior researchers from Skope being used as key advisors on the newly developed Scottish Skills Strategy. Moreover, it has remained heavily involved in advising on the policies and programmes that need to be developed in order to achieve that strategy.

Economic impact

Skope's work has had a substantial impact on the development of the Scottish Skills Strategy. Initially, their evidence was influential in the decision by the Scottish government not to follow the Leitch recommendations and develop a supply focussed approach to skills.

Subsequently, Skope's influence can be seen in the key elements of the Scottish Skills Strategy, which appears to relate closely to Skope's model of Supply, Demand and Usage. For example, the key elements of the Skills Strategy can be described as:

- Highlight the skills valued and required both by employers and individuals (Demand);
- Demonstrate how sectors from Further Education/Higher Education to schools, community learning and workforce development can contribute to the skills agenda (Supply);
- Outline the responsibilities of those involved in skills development (Usage).

Clearly, it is too early to be able to place an economic value against Skope's impact. What is clear is that Skope has substantially influenced the direction of skills policy in Scotland. Consequently, when that strategy has been implemented and evaluated it should be possible to place a value against the impact Skope has had.

5.4 RESEARCH OUTPUTS

This section examines the extent to which it is possible to quantify the impacts associated with the research outputs produced by Skope. It is worth noting at

the outset that the administrative information held by Skope is less detailed than that held by CEP. However, this is understandable given the relative size of Skope and the scale economies associated with the collection of administrative information.

We set out below the evidence that is possible to develop in relation to research outputs.

Specifically, we examine:

- books;
- journal articles;
- discussion papers;
- newsletter;
- data sets;
- conferences and workshops; and
- capacity building.

5.4.1 Books

Skope typically publish one or two books each year, usually in the fields of skills and management. Skope funded authors did not publish any books in the last year we examined, 2006.

Table 16 below presents the number of books produced by Skope funded authors (with a pro rata to take account of the proportion of ESRC funding). It does not include pieces that have been specifically commissioned and funded by non-ESRC sources. It also excludes books published by Skope associates who are directly funded by Skope.

	2004	2004 after pro rata	2005	2005 after pro rata	2006	2006 after pro rata
No. books published	1	0.3	3	1.5	0	0

Table 16: Books output (Skope) with and without pro rata

We were unable to develop evidence in relation to the usage of these publications or consequently the value placed on those books by users.

5.4.2 Refereed journal articles

Skope typically publish around 10 refereed articles each year. These are published primarily in education journals.

Table 17 sets out the number of refereed papers (with a pro rata to take account of the proportion of ESRC funding).

We were unable to identify usage or value data for these papers (see methodology issues for CEP above). We therefore use the citations methodology described above to get a measure of usage. This suggests that papers published in 2003 have been cited approximately 60 times. This indicates an average citation rate of 6 per paper. These figures compare favourably to the average for REPEC citations index, which suggests an average citation level of 2.35.

	2004 (after pro rata)	2005 (after pro rata)	2006 (after pro rata)
Refereed journal articles	8.5	10.1	9

Table 17: Refereed journal articles (Skope)

5.4.3 Issues papers and newsletter

Skope produce three to four issues papers each year. In addition, they produce a newsletter several times a year. Skope do not count the number of individuals downloading issues papers from their website.

However, Skope were able to provide the number of people that are sent issues papers free of charge. A total of 638 individuals and organisations are sent a copy, either hard or electronic, of each issues paper and newsletter.

5.4.4 Datasets

Skope produces a number of datasets, the most important of which is the Skills Survey, a survey of employee skills which is jointly commissioned by ESRC and DIUS.

We were not able to develop robust usage or value figures for these datasets.

The datasets produced by Skope are provided free of charge through the UK Data Archive. While we obtained usage figures for the Skills Survey (2001) from the UK Data Archive, this does not provide a reliable usage estimate as a dataset may have multiple users within an organisation. The usage figures did show, however, that that it is mostly used by academic and government users (see Table 18).

	2004	2005	2006
Academic	12	9	4
Government	0	3	0
Other	0	3	0
Total	12	15	4

Table 18: Skills Survey (usage)

Methodology issues

The Skills survey is an important resource, and qualitatively there is evidence that it is highly value by policymakers and analysts in government, academia and related institutions. However, there is very little administrative data available on the extent to which it is used, or the purposes it has been used for.

We suggest that the only way to overcome this lack of information would be through a bespoke study of likely users.

5.4.5 Skope events

Skope host a number of events each year in their Oxford and Cardiff centres, including seminars, international conferences and a joint event with Teaching and Learning Research Programme (TLRP) and the Institute of Education. Skope does not have attendee lists for all their events. We therefore combined attendee lists – where available – with estimates of attendance provided by the research centre.

Table 19 below provides information on the number of events, attendees and estimated value for Skope events in 2006. To get an estimate of value we used a cost of time methodology. We used attendee list to provide a broad characterisation of attendees into different wage rates. We combined the wage rate with an assumption period of time per event to calculate an implied value for Skope events.

Table 19 shows that Skope held 16 events in 2006, generating an estimated value of £15,000, which equates to around £30 per attendee.

	Number of events	Estimated Attendance	Estimated Value
Skope Events 2006	16	515	£15,000

Table 19: Value and volume data for Skope events for 2006

5.4.6 PhDs awarded

Table 20 below provides information on the number of PhDs awarded each year to Skope researchers. We have not been able to develop any information on the value associated with PhD degrees awarded by Skope.

	2004	2005	2006
PhDs awarded	1	3	0

Table 20: PhDs awarded (Skope)

5.5 SUMMARY

Below we provide a brief summary of key findings regarding the extent to which we could generate measures of value produced by Skope. This is broken into:

- value associated with policy impacts; and
- value associated with research outputs.

Value associated with policy impacts

Table 21 sets out a summary of what it was possible to measure in relation to each of the case studies on policy impact. We were able to find good qualitative evidence of impact in relation to both case studies. We were unable to develop any quantitative measures of impact.

Case study	Qualitative evidence of impact	Quantitative evidence of impact
Skills policy in England	Yes – based on interviews with researchers and policy officials	No – hard to link explicitly to a policy
Skills policy in Scotland	Yes – based on interviews as above	No – can link to a policy, but too early to develop evaluation evidence

Table 21: Case studies on impact (Skope)

Table 22 below sets out our findings in relation to the evidence of impact generated in relation to each case study. In order to provide a balanced view of impact achieved, Table 22 breaks the evidence down into three categories: well targeted research; effective transmission mechanism; and estimated level of impact.

As can be seen from Table 22, it is clear that Skope has had an impact on skills policy in both England and Scotland. They score extremely highly in terms of the targeting of research to have a policy impact, and they have also developed an effective transmission mechanism. Their estimated level of

impact is particularly high for Scottish skills policy, while they are also thought to have influenced a range of policies in the skills arena in England. We were unable to develop any quantitative measures.

Case study	Well targeted research	Effective transmission mechanism	Estimated level of impact/value generated
Skills policy in England	<p>Key critique of current skills policy</p> <p>Leaders in research into leadership and management skills</p> <p>Key provider of research into role of institutions in provision</p>	<p>Highly effective</p> <p>Regular contact with government departments and skills bodies</p> <p>Drawn on by Leitch review</p>	<p>Likely to be substantial</p> <p>Influenced Leitch on management and leadership skills and key evidence relied on for increased management and leadership skills funding through Train to gain</p> <p>Influential in advocating enhanced role of Sector skills Councils and UKCES</p>
Skills policy in Scotland	<p>Critique of traditional supply led skills models</p> <p>Developed evidence on how this approach has failed in Scotland</p> <p>Leading advocate of alternative approach</p>	<p>Extremely effective</p> <p>Key advisor on the recently published Scottish Skills Strategy</p> <p>Continue to advise on policies and programmes required to implement the strategy</p>	<p>Likely to be high – can link to development of new skills policy</p> <p>Too early for a quantitative evaluation</p>

Table 22: Case studies (Skope)

Value associated with research outputs

Table 23 below sets out the extent to which it was possible to develop qualitative and quantitative measures of value. As can be seen, we have been able to develop volume measures for some outputs. We were able to identify very few value measures for Skope's outputs.

Type of outputs	Output measures	Volume measures	Value measures
Books	Yes		
Refereed journals	Yes	Citations (all papers)	
Datasets	Yes	User organisations	
Issues papers and newsletter	Yes	Distribution list	
Conferences and workshops	Yes	Estimated – average attendees	Estimated – cost of time method
Capacity building	Yes	No of PhDs	

Table 23: Availability of evidence (Skope)

Table 24 below shows estimates of volume and value. As can be seen, it has been difficult to develop evidence for a large number of measures. This is not to suggest that the outputs that Skope produces are not valuable, but rather that the information is not currently collected in a form that allows us to fully measure them.

Type of outputs	Output measures	Volume measures	Value measures
Books	1.8 books (2004 to 2006 pro rata ESRC funding)		
Refereed journals	28(2004 to 2006)	60 citations (for papers produced in 2003)	
Data sets	2	31 user organisations (2004 to 2006)	
Issues papers and newsletter		Distributed to 638 organisations/ individuals	
Conferences and workshops	16 events in 2006	515 attendees at 2006 events	£15,000 (2006)
Capacity building	4 PhDs awarded (2004 to 2006)	3 in 2005	

Table 24: Volume and value (Skope)

6 Conclusion

At the outset, we stated that there were two main objectives of this study. These were the following:

- To assess the degree to which it is possible to measure the value of economic and social research activities by testing a number of valuation methodologies on the research outputs of two economic research centres, the Centre for Economic Performance (CEP) and the centre on Skills, Knowledge and Organisational Performance (Skope).
- To assess the impact the research outputs have on the policy process and subsequently on the economy.

Our approach has been to test different approaches to measuring the value of research outputs and the impact of research outputs on policy and practice. We have drawn on evidence that includes a combination of a detailed examination of the administrative data and documents for each centre alongside in-depth interviews with researchers. We have also interviewed policymakers to get an understanding of the policy impacts.

6.1 POLICY IMPACTS

We have examined a number of case studies from CEP and Skope in relation to policy impacts. The case studies have examined three areas of performance in relation to policy impacts:

- targeted research;
- effective transmission; and
- evidence of value.

Our analysis suggests that both research centres are highly effective in targeting their research at those areas of public policy where there are clear evidence gaps and where its research is likely to generate substantial impacts.

This is complemented by a highly effective transmission mechanism. Evidence from all the case studies suggests that the research centres do not just pump out research papers and wait to see what happens. They have cultivated close links with policy makers and officials who are operating in their chosen research areas, and employ a range of dissemination mechanisms including seminars, workshops, working papers and individual briefings. Policy makers also value their flexibility – in that they are on hand to provide input on an informal basis and the disciplined way in which they produce research in a timely fashion.

In the case of CEP, despite the clear evidence that it interacts regularly with policymakers and we have been told that it has clearly influenced the development of policy, it is difficult to identify quantitative estimates of the value that this generates.

This is due primarily to two reasons:

- policies have typically been developed on the basis of a range of sources and so it is difficult to apportion a particular element of value to the research produced by any one organisation; and
- there is, in general, a lack of good evaluation evidence on the impact of government policies.

However, in the case of the National Minimum Wage (NMW) it was possible to develop an empirical estimate, using a conservative assumption about its influence on policy, that resulted in CEP providing substantial value. Given that this related only to one small area of CEP's research profile, it would appear safe to conclude that the value generated by CEP's research – in terms of its policy impact – is substantially in excess of the public funding it receives.

We find that Skope perform well in relation to targeted research and effective transmission. Their research is clearly policy focussed, and they have identified areas for research that are most likely to lead to policy impact in the future. They have also developed an excellent dissemination mechanism, whereby they regularly provide updates on their research findings and the implications for policy development to policy makers in both England and Scotland.

Again, it has been very hard to identify quantitatively their economic impact. The most promising avenue appears to be their work in influencing the development of the Scottish Skills Strategy. However, it will be some time in the future before a quantitative impact from that work could be identified.

In terms of the wider implication of conducting this type of research the findings are similar to those from the CEP case study. It suggests that a case study approach will need to focus on the targeting of research and the effectiveness of the transmission mechanism as indicators of value. Our view is that only in exceptional cases is it likely to be able to provide robust quantitative estimates of value generated. The circumstances where such impacts can be developed are where:

- the research centre has been commissioned explicitly to develop evidence on which a policy may be based; and
- a robust evaluation of the policy in question has been undertaken.

Otherwise, future studies will have to rely on pulling together diverse (and often sparse) information to try to give a broad indication of the likely magnitude of value generated.

6.2 RESEARCH OUTPUTS

We have mapped all of the types of research outputs generated by both research centres, and then selected a number of outputs for testing the valuation methodologies. Our findings are that in some selected cases it may be possible to apply estimated values to research outputs. For example, in the case of books, it is possible to find out how much each book sells for and to get its sales volumes on an annual basis. On the other hand there are some important

Conclusion

research outputs where it is simply too difficult to estimate their value. For example, we have not been able to apply an effective valuation methodology to articles in referred journals, which are critical research outputs in economic research.

However, we do think that the research centres could develop more of a focus on the value generated by their research outputs. For example, we believe that better information could be collected on their dissemination activities, such as the number of attendees, details of attendees and information, and in particular, on the time spent by attendees at each event. We should note that already some very useful information is collected and is used to identify people for future events. None the less, we are of the view that more accurate information on attendees could be obtained and used more effectively. Further, we believe that use of the cost of time methodology could allow research centres to get an understanding of the value of their events. Research centres could also collect more systematically, the value generated by book sales, by collecting data from authors on an annual basis.

6.3 SUMMARY

We find that standard valuation methodologies can only be applied partially to research outputs of the two research centres, and it was not possible to apply them to critically important outputs, such as refereed journal articles. To get a robust estimate of the impact on policy and its subsequent economic impact, would require more reliable evaluation evidence of policy impacts. However, using a case study approach we did find it was possible to get reliable evidence from policy makers and other stakeholders on the degree to which research centre activity has influenced policy development.

7 References

- Arrow et al, 1993. *Report of the NOAA Panel on Contingent Valuation*. Available at <http://www.darrp.noaa.gov/library/pdf/cvblue.pdf>
- Dickens, Machin, Manning, Metcalf, Wadsworth and Woodland, 1994. 'The Effect of Minimum Wages on UK Agriculture'. *Journal of Agricultural Economics*, 46 (1). pp. 1-19.
- Frontier Economics, 2007. *Evaluating the impact of ESRC funding*. A report to the ESRC.
- Hayden, 1989. *Survey of Methodologies for valuing externalities and public goods*. Available at <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1006&context=econfacpub>
- Machin and Manning, 1992. *Minimum Wages*. Available at <http://cep.lse.ac.uk/new/publications/abstract.asp?index=80>
- Martin Meyer & Puay Tang, 2006. 'Exploring the "Value" of Academic Patents: IP Management Practices in UK Universities and their Implications for Third-Stream Indicators,' SPRU Electronic Working Paper Series 143, University of Sussex, SPRU - Science and Technology Policy Research
- Metcalf and Fernie, 1996. *It's Not What You Pay*. Available at http://cep.lse.ac.uk/_new/publications/series.asp?prog=CEP
- Molas-Gallart, J. & Tang, P. (2007): *Policy and Practice Impacts of ESRC Funded Research – Case Study of the ESRC Centre for Business Research*, ESRC
- Pettigrew, A. M., 2008 "Scholarly impact" and the co-production hypothesis', *EFMD Global Focus*, 2 (2) pp. 8-12.
- Wooding ... (Chris – can you add the full ref in next version)

Annexe 1: Assessment of the Centre for Economic Performance's policy impacts

PSYCHOLOGICAL HEALTH

Context

The CEP has measured suffering from different illnesses (including mental illness) in a consistent way for purposes of health-care planning. The Mental Health Policy Group established by the centre has written five influential papers that have fed into the Department of Health (DH) and the Department for Work and Pensions (DWP) policy development process. A direct impact was Layard's paper for the Prime Minister's Strategy Unit *Mental Health: Britain's Biggest Social Problem?* that appeared in Labour Party Manifesto in January 2005 and led to the major expansion of psychological therapy.

Layard was influential in persuading government this was an important and neglected policy area and certainly played a part in ensuring mention in manifesto and subsequent commitment of £170m per year. The Department of Health website quotes Health Secretary Alan Johnson's commitment that the £170m per year of funding to psychological therapy will be made by 2010-11, with £30m in 2008-09 and more than £100m in 2009-10.

Impact

The CEP's work led to a change in direction of government policy on a specific area, psychological health, where a clear alternative was to continue with the status quo. The timing of the policy impact is not ideal since the Mental Health Policy Group was only established in 2005 and Layard's influential paper *Mental Health: Britain's Biggest Social Problem?* was also only published in 2005. Nevertheless, the psychiatric policy impact has been swift and direct. It would be possible to find the extra funding that went to psychological health as a result of the CEP's work and use this as a measure of impact.

Criteria Assessment

This policy impact was not taken forward because it failed the ownership criteria. Key publications and policy influences were the result of Layard's work individually rather than the work of the centre. It was not clear that this was essentially CEP work, nor that it was ESRC funded.

THE NEW DEAL

Context

The CEP studied the “mobilisation failure” in that 1985 vacancies rose to same level as 1975 level but unemployment was three times higher. They traced this through to the way people were treated at benefit offices and job centres. They “recommended something close to the New Deal as it was eventually implemented in 1998” (CEP, 2002). They have moved policy focus onto long-term unemployment.

The CEP’s analysis was tested by a natural experiment: Denmark, Holland and Britain followed policies advocated by the CEP whereas France, Germany and Belgium did not. For those countries that followed the CEP’s supply-side policies, unemployment fell from 1993 onwards to its 1975 level, whereas for those that did not, unemployment was still double its 1975 level (CEP, 2002)⁶. Supply is thought to have been the driving factor because a demand story is not supported by the fact that vacancies did not rise (or rose little). The CEP has also worked with Gordon Brown’s staff designing the Youth New Deal programme.

There have been a range of New Deal policies that have been introduced including:

- New Deal for Young People (NDYP), 1998;
- New Deal 25+, 1998;
- New Deal Lone Parents, 1998;
- New Deal Partners, 1999;
- New Deal 50+, 1999; and
- New Deal for Disabled People, 2001.

Impact

The CEP’s work on unemployment that led to the New Deal is a strong example of how a research centre can have a policy impact. They did groundbreaking research, for example, Van Reenen⁷ mentions the development of job search theory by the CEP’s Pissarides, along with Mortensen. The textbook *Unemployment: Macroeconomic Performance and the Labour Market* by Layard, Nickell and Jackman (1992) was also influential in setting out the framework for the supply-side policies advocated by the CEP.

The CEP interacted with government. In particular, they participated in a working group created by Gillian Shephard that produced ‘Project Work,’ a forerunner of the New Deal, as well as having regular contact with policymakers, including working with Gordon Brown’s staff to implement NDYP.

The evaluation work that has been done on the New Deal programmes that have

⁶ The Centre for Economic Performance, Queen’s Prize Submission, 2002

⁷ Van Reenen, 2008, <http://cep.lse.ac.uk/pubs/download/cp248.pdf>

been introduced suggest that the impact has been large. The National Institute of Economic and Social Research (NIESR) in 2000 estimated that NDYP generates a net benefit of £500 million for the economy every year.⁸ In addition, the New Deal has helped 1.8m into work, including 300,000 lone parents, according to the DWP. The CEP found that the New Deal increased the job find rate amongst the unemployed by 20%⁹ and that the benefits outweighed the costs. The New Deal is thought to have contributed to a £5bn reduction in unemployment spending for 2007 as compared to 1997, and a reduction in claimant unemployment in 2007 to a 30 year low.

Criteria assessment

Not all the academic work that led to the implementation of the New Deal was done by the CEP. In particular, it built on work by Centre for Labour Economics that argued for supply-side policies as a means to reduce unemployment. There was also a rich literature in the US around the unemployment insurance (UI) system created by the Social Security Act of 1935. Van Reenen (No More Skivvy Schemes? Active Labour Market Policies and the British New Deal for the Young Unemployed in Context, 2001, IFS) mentions a number of studies done in the US. In particular, Meyer surveys five experiments that show “job search monitoring and assistance significantly reduce the duration of claims” (Lessons from US Unemployment Insurance Experiments, 1995, Journal of Economic Literature). The extent to which the CEP could claim ownership of the New Deal could only be established through extensive case study material.

The New Deal policy impact also fails the timing criteria. Because the New Deal was introduced in 1998, it is no longer possible to speak directly to the policymakers involved to carry out “due diligence” of the policy impact. Because the relevant policymakers in government departments are not known, and even if they were it would not be fresh in their minds.

⁸ Riley and Young (2001) the Macroeconomic Impact of the New Deal for Young People. National Institute of Economic and Social Research. London

⁹ Van Reenen (2008) <http://cep.lse.ac.uk/pubs/download/cp248.pdf>

CLUSTERS AND URBAN SPRAWL

Context

Overman's research on clusters and urban sprawl has been published in leading economics journals (The Review of Economics Studies and The Quarterly Journal of Economics). The CEP has presented to the Department for International Development (DfID), e.g. 'Costs and Benefits of Cities' June 2004. Overman has provided advice to the Eddington Transport Study (2005) as well as HM Treasury and the Office of the Deputy Prime Minister (ODPM).

Criteria assessment

The CEP's work on clusters and urban sprawl seemed like a promising policy impact to explore, because of the influential work that had been produced and the regular contact Overman had had with policymakers. We were unsure of specific policy impacts so interviewed Overman on 29th July 2008 to find out more. The interview with Overman was revealing. On the specificity criteria we found that the CEP's work had done more in formulating a consensual approach, for instance during the Eddington Transport Study, than producing specific policy prescriptions. The work did not actively encourage a different view, rather functioned as one voice amongst many in forming the general view. The CEP, and Overman in particular, have not yet had the chance to make a distinctive contribution on clusters and urban sprawl as they are still building their reputation in this area.

EDUCATION

Context

Education is currently a major area of research for the CEP, working alongside the Centre for the Economics of Education (CEE) headed by Steve Machin. Blanden, Machin, McNally and Murphy have worked on factors underpinning changes in intergenerational mobility in the UK that has significantly changed the evidence base available to policymakers.

Criteria assessment

The CEP's work on education failed a number of our criteria for evaluating a policy impact. First, there are few specific policy prescriptions that have come from the CEP's work and that have been picked up by government. Second, the close involvement of the CEE makes it difficult to assign ownership of the policy impacts to the CEP alone. It also seems too early to evaluate the policy impact of the CEP's education work because although it has become part of the knowledge base that policymakers use, it has not obviously produced policies as a result.

Annexe 2: Valuation methods for the Centre for Economic Performance's research outputs

MEASUREMENT OF THE VALUE OF BOOKS

For most years, we did not have sales information. Because of the lack of sales data, we decided to focus on the year 2005 for CEP which did have good information. This could then be rolled out across other years given the collection of appropriate information from research centres or a commercial source.

Even for the year 2005 we had to deal with some missing information. We did not have any sales information for *The Persistence of Poverty Across Generations: View from Two British Cohorts* (Blanden and Gibbons, 2006). The sales for this book had to be excluded from the study. For *Fair Trade for All: How Can Trade Promote Development?* (Stiglitz and Charlton, 2005) Charlton did not know paperback sales and we did not know the average price that translations sell at. We have taken a conservative approach and not included paperback sales and have assumed that translations sold for the UK paperback price. For *Happiness- Lessons from a New Science* (Layard, 2005) we were told that over 100,000 copies were sold but were not given a breakdown across paperback, hardback, and translations. We assumed that all books were sold at the lower paperback price. Taking into account the points of missing information, we were able to generate lower-bound figures for total sales of books produced by books involving a CEP author of 134,500. The revenue based on these sales was £1,500,655.

We adjusted for the pro-rata. This reflects the fact that *Fair Trade for All: How Can Trade Promote Development?* was co-authored and *The Persistence of Poverty Across Generations: View from Two British Cohorts* was published by Blanden, who was not ESRC funded, and Gibbons, who was not a member of CEP. This reduced the ESRC funded part of CEP's book output from 4 to 2.5, and led us to halve book sales for *Fair Trade for All: How Can Trade Promote Development?* when calculating our usage figure. The missing book sales information for Blanden and Gibbons' work was not important because this would have been excluded anyway. After applying the pro rata, we get usage, based on sales, of 121,000 that can be attributed to ESRC funded, CEP books published in 2005. Calculating the value of this usage, based on revenue, we get £1,319,790 for ESRC funded, CEP books published in 2005.

MEASUREMENT OF REFEREED JOURNAL ARTICLES

We first counted the number of refereed journal articles produced by the CEP for 2003-06. We then applied a pro rata to take into account that a number of these papers were co-authored with non CEP authors and thus could only be part attributed to the CEP. For 2006 this led to us attributing a total of 47.05 papers to the CEP from an initial list of 57.

Frontier used ISI Web of Knowledge, an online database provided by Thomson Reuters, to analyse the citations of the 57 papers published in refereed journals by CEP in 2003. This period of papers was used following preliminary analysis that shows it takes several years for a good quantity of citations data to accumulate on ISI Web of Knowledge for a particular year of papers.

Web of Knowledge's journal coverage is good but not perfect. It covers all journals in the top 30 list of journals found in Palacios-Huerta and Volij's 2004 *Econometrica*¹⁰ paper. It excludes, however, a number of journals in which CEP articles were published including 'Economic Systems', 'London Review of Education' and 'Leadership Quarterly'. In all, 37 out of 57 of CEP's articles were included in the analysis.

For the 37 CEP refereed journal articles included in the analysis, we counted the number of citations in the database across a number of different categories of journals. First, we only looked at citations in the top ten economics journals (as defined by Frontier, see Table 25), then we counted citations in the top 30 economics journals as defined by Palacios-Huerta and Volij, 2004, and, finally, we looked at citations in all journals. We found that the refereed journal articles published by the CEP in 2003 had 22 citations in the top ten journals defined by Frontier, 62 citations in the top 30 journals defined by *Econometrica*, and 292 citations in all journals.

Name of journal
Econometrica
Quarterly Journal of Economics
Journal of Economic Literature
American Economic Review
Journal of Political Economy
Review of Economic Studies
Journal of Monetary Economics
Journal of Economic Theory
Games and Economic Behaviour
Journal of Economics Perspectives

Table 25: Top ten journals as defined by Frontier

¹⁰ Palacios-Huerta, I. and Volij, O. (2004) "The measurement of intellectual influence" *Econometrica*, 72 (3): 963-977

These figures should have a pro rata applied to give a better idea of the citations that can be credited to CEP funded authors. Ideally, this would involve first multiplying a pro rata for each refereed journal article by the number of citations for that article, and then summing these adjusted citations figures across all articles. To give a rough approximation, we took the CEP's annual report figure states that there were 50 papers that can be attributed to CEP in 2003 on a pro rata basis, compared to a total number of papers for 2003 of 57. This suggests that we should reduce the citations by approximately 12%, giving citations figures of 19, 54 and 256 for the three classes of journal respectively.

MEASUREMENT OF THE VALUE OF DISCUSSION PAPERS

We generated some descriptive statistics of the download data provided by the CEP for the discussion papers from their website. This tells us that there were 711,579 downloads for CEP discussion papers in 2006. This figure has been rising steadily since 2003 when the download total was 182,858 through to the latest data for 2007 with a download total of 911,858. By looking at hits to date for the example years of 2004-06 we exclude hits in future years which may be significant. This will be particularly important for any future “blockbuster” papers that have a disproportionately large number of hits in any one year.

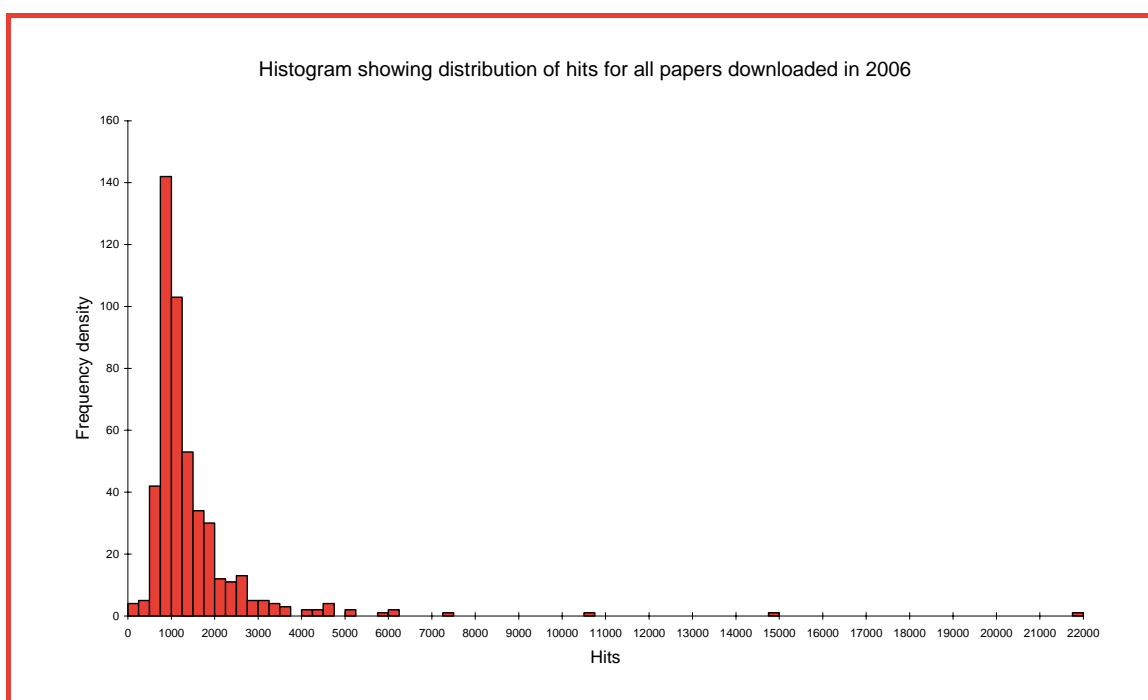


Figure 3: The 2006 hits distribution

Figure 4 shows that for the papers downloaded in 2006, a few papers gain an extremely high number of hits in each year, and the majority of papers clustering around 750-1000 hits.

The data provided by the CEP has a high level of granularity and allows us to look at the “lifecycle” of a CEP discussion paper. This highlights the issue that a paper may have an extremely high number of hits long after it was published. In

the case of *Politics and the Effectiveness of Foreign Aid* (Boone, 1995), it was the top-ranked journal in 2005 and 2006 when it had 21,923 hits, 11 years after it was published in 1995. From the data, we can see that the paper grew in popularity in the years prior to 2006 before then trailing off in 2007.

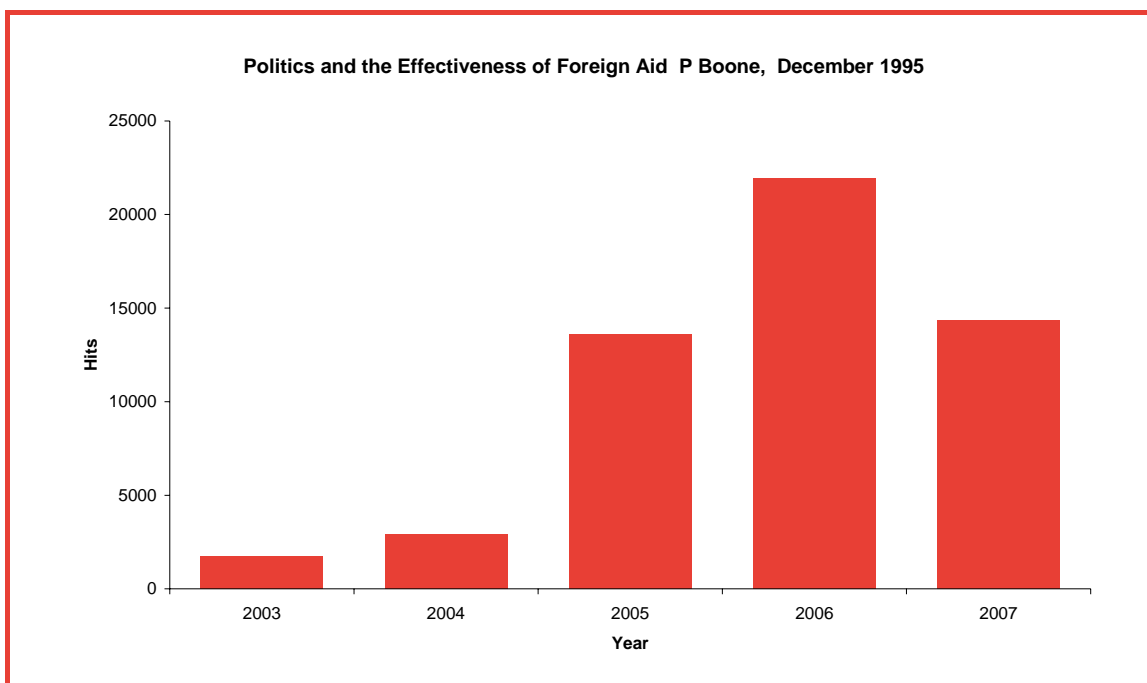


Figure 4: An example CEP discussion paper “lifecycle”

Although our estimates will be underestimate lifetime hits, it is reassuring that most papers do gain most of their hits in the few years after publication.

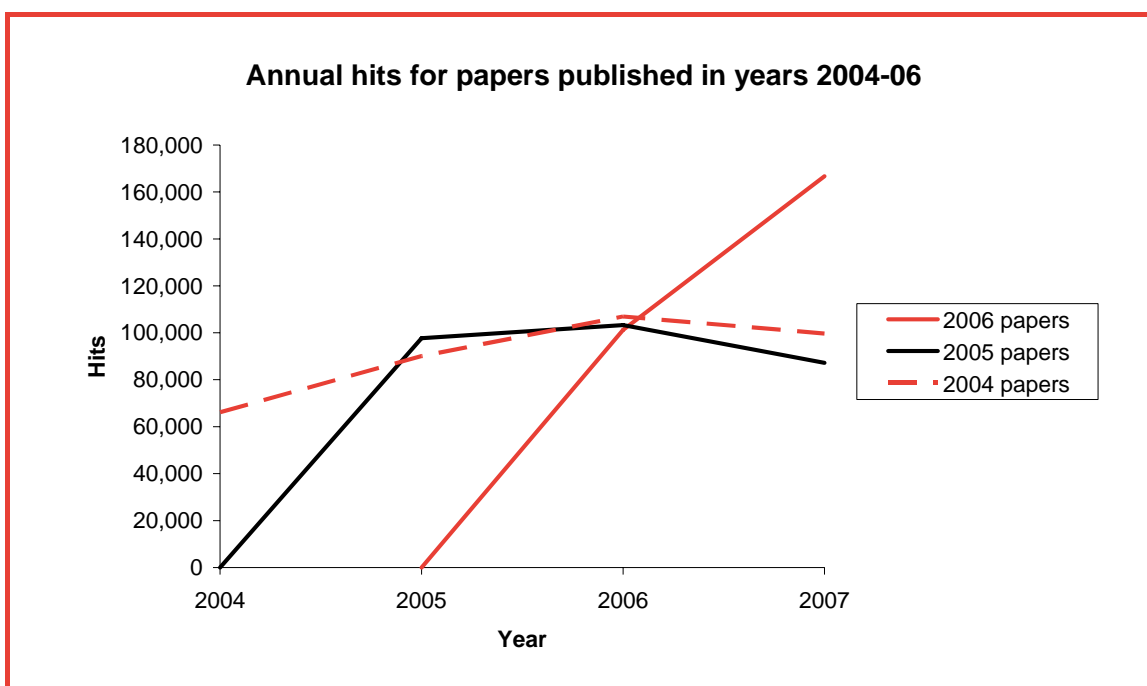


Figure 5: Annual hits for papers published across the years 2004-06

Figure 5 shows that for the years that we are looking at 2004-06, the papers received most hits two years after they were first published. The hits then begin to tail off, but are still high. By looking at the first few years after publication, we capture a significant number of hits, but far from all the lifetime hits of papers.

By applying the hits since publication measure of usage we get the following usage figures (Table 26).

	2004 papers	2005 papers	2006 papers
Hits to date	362,785	288,136	267,946

Table 26: CEP discussion paper hits

One way to obtain a value estimate of the usage of CEP discussion papers is to multiply usage volume by the price of a comparable paper. CEP discussion papers are distributed free of charge, but another research centre the Centre for Economic Policy Research (CEPR) charges £3 for its discussion papers. We used this number as a base case to measure value. If a CEP discussion paper hit were in fact only worth one pound on average, the usage value of 2004 papers would reduce to £362,800 but alternatively if £5 were used, usage value would rise to £1,813,925. The value measure is highly sensitive to the value placed on an individual hit. Some users would not be willing to pay £3 to read some papers but this is offset by the fact that some users would actually place a much higher value on their reading of a discussion paper than £3. We use £3 as a measure of average value as the most reasonable value available.

Another approach to getting value usage per use is to calculate a typical user's cost of time. The value per usage is likely to be similar, e.g. average wage per hour is approximately £16. For example, suppose that half the users open a discussion paper but then immediately exit, one quarter spend one quarter of an hour reading a discussion paper, ten percent spend half an hour reading a discussion paper, ten percent spend one hour reading a discussion paper and five percent of users spend two hours reading a discussion paper (which is likely to be the amount of time needed to read it properly). This would generate a cost of time estimate of usage value per use of £5.

	2004	2005	2006
Value (No. hits in each year × £1)	£0.36m	£0.29m	£0.27m
Value (No. hits in each year × £3)	£1.1m	£0.9m	£0.8m
Value (No. hits in each year × £5)	£1.8m	£1.4m	£1.4m

Table 27: Discussion papers total value under different average value per usage assumptions

We do not apply a pro rata in this case because a CEP discussion paper is specifically a CEP output, even if external authors contributed to its production. Applying a pro rata in this case would lead to an underestimate of the research centre's output. The fact that not all of this output can be attributed to ESRC should be reflected not through a pro rata of individual papers but by reference to the fact that they are not the only source of funding for CEP.

MEASUREMENT OF THE VALUE OF THE MAGAZINE

We obtained the current distribution list for the CEP magazine that contained information going back to 1999. We calculated the total distribution of the magazine, including those that are provided it free of charge, for each year 2004-2006, adjusting for individuals and organisations who only subscribed for part of one of the reference years.

	2004	2005	2006
Total distribution	1974.33	1940.33	1916.67

Table 28: CentrePiece total distribution

We chose not to take the total distribution numbers as a measure of usage because although all these individuals and organisations are sent the magazine, we had no guarantee that it was actually read.

Instead, we only used the information for those individuals that subscribed to the magazine. The subscription rate is £8 for students for one year, £13 for other individuals and £30 for organisations. For those individuals or organisations that

Annexe 2: Valuation methods for the Centre for Economic Performance's research outputs

started or ended their subscription part way through the year we used a pro rata to calculate the proportion of that year for which they were a subscriber. Once we knew who had subscribed in each year, and for how much of the year, we were able to multiply by their user type to find the subscription revenue for that year.

Occasionally, the database showed that users either did not pay their subscription charge or were given a discount. In addition, non-EU organisations pay a slight premium for the magazine. Our figures reflect what was actually paid by users for the magazine.

The number of users in each year that subscribed to the magazine was comparatively small, only 112.67 for 2006 compared to 1916.67 for total users. This generated relatively low revenue figures of just £1535 in 2004, falling to £986 in 2006. On this basis, we do not believe that the CentrePiece magazine is a significant direct generator of value to the CEP. This is not to say that it serves as an important input to outputs such as refereed journal articles, discussion papers and policy impacts.

MEASUREMENT OF THE VALUE OF EVENTS

For the attendee lists that the CEP provided we categorised all attendees for every CEP event, and found approximate wage rates for the different users through a combination of the IDS Pay Benchmark (1998) and SalaryExpert.com. We then sum the cost of time over all individuals to gain an approximate estimate of the value of an event. Where our attendee information significantly underestimates total attendees, for example for public lectures we only had the after-lecture dinner list, we use an estimate of the total attendance and find the cost of time using the average wage rate of the UK. We focused on just one year, 2006, where we gained complete information for all CEP events in that year.

The CEP provided attendee lists for a wide range of events from 2004-08. Many of these events were Centre for the Economics of Education (CEE) conferences which we excluded from the analysis. For the example year of 2006, this gave us the following breakdown of events.

	2006
Conferences and public lectures	8
Other public events	14
Workshops	6
Industry forums	1

Table 29: Events (CEP)

The CEP informed us that attendance at public events is typically 400. We used this as a guideline for calculating attendees rather than the limited attendee lists

Annexe 2: Valuation methods for the Centre for Economic Performance's research outputs

provided by the CEP since the latter were only for some conferences and only covered those invited to the after-dinner speech. For other events, the attendance was highly variable, and so we only used attendees provided. For 2006, we were missing information for other public events and workshops.

	2006
Conference and public lecture attendees	3200
Other public events attendees	194*
Workshop attendees	0*
Industry forum attendees	85

Table 30: Events usage (CEP)

* Missing attendee information

By using the current average wage rate and the event lasting one hour, plus travel time of one hour, that would imply a cost of time of £102,100 for conferences and public lectures in 2006. It is also important to note that some of the figures attending the events are extremely influential including the Governor of the Bank of England, MPC Committee members, and senior figures from Treasury and other government departments. Only a small fraction of the extra value of having such influential members present is captured by adjusting for their more expensive cost of time. Rather, the value is reflected in the policy impacts that may result from their presence at the conference.

For other public events, industry forums and workshops we simply added up the cost of time of those present based on the average wage of the group that they belonged to, assuming that the event lasted one hour and the travel time lasted one hour. These categories include academic, banking, business, charity, consultancy, education, examining body, financial services, government, legal, media, research council, think tank, and trade union. The categories were based on the cross section of institutions that attendees belonged to. We were missing data on eight out of 14 other public events and two out of six workshops for 2006. Based on actual attendee lists for other public events and industry forums we generated value estimates of £7,200 for other public events and £3,300 for industry forums.

MEASUREMENT OF PHDS AWARDED

We used information taken directly from CEP's annual reports 2004-06.

Annexe 2: Valuation methods for the Centre for Economic Performance's research outputs

Annexe 3: Valuation methods for the centre on Skills, Knowledge and Organisational Performance

MEASUREMENT OF BOOKS

Finding Skope's output of books required the application of a pro rata to find the proportion of books produced by Skope funded authors. We were not able to move in this case from Skope funded to ESRC funded authors because Skope do not provide details of how their funding is distributed. However, most external funding goes directly to fund major projects such as the Skills Survey, and so most other Skope projects are ESRC funded. This means that our findings are not significantly biased. Skope published one book in 2004 and 3 books in 2005. After accounting for non-Skope authors, this is 0.3 books in 2004 after the pro rata, and 1.5 books in 2005 after the pro rata.

We did not have any sales information for Skope's books, so were not able to find usage or value measures for Skope's book output.

We were able to obtain library usage figures from the British Library and from the Oxford Social Sciences Library. The usage figures per year for the Skope publications looked at were all less than ten for the British Library. For the Oxford Social Sciences Library most usage figures were low but *Exploring Corporate Strategy* (Johnson et al, 2004), which was 33% Skope funded, has been loaned 77 times during its life in the library. This gives an indication that the book has been used a significant amount but does not tell us about total library usage. That would require the collection of data across a number of libraries which we are not able to do here.

MEASUREMENT OF REFEREED JOURNAL ARTICLES

For the example years of 2004-06, we adjusted the number of articles published in each year to reflect the proportion of each article that was written by a Skope funded author. For 2006, three works were authored by two authors only one of which was Skope funded (meaning that these three only count for 1.5) and two works had four authors only one of which was Skope funded (meaning that these two works only count for 0.5). On this basis we found the below figures (Table 31).

	2004	2004 (after pro rata)	2005	2005 (after pro rata)	2006	2006 (after pro rata)
Refereed journal articles	11	8.5	12	10.1	12	9

Table 31: Refereed journal articles (Skope)

We then found the number of citations that Skope receive across all refereed journals for their refereed journal articles in 2002-03. These citations should also be adjusted for a pro rata for 2002 -03 papers. We know from our work looking at 2004-06 that this adjustment is likely to lead to a reduction in the citations count of between 15.8% and 20%, leading to a citation count between 57 and 64.

Class of journal	Number of citations
Top ten economics journals	0
In top 30 economics journals	0
In all refereed journals	76

Table 32: Citations of Skope papers published in refereed journals (2002-03)

Source: ISI Web of Knowledge

MEASUREMENT OF ISSUES PAPERS AND NEWSLETTER

Skope produce a number of issues papers and a newsletter that are distributed to 638 individuals and organisations free of charge. No users pay to receive issues papers or to subscribe to the magazine. Furthermore, Skope do not count users downloading issues papers and do not have information on users who actively download the newsletter. Because of these data problems we have not estimated usage and value numbers for the Skope newsletter.

MEASUREMENT OF DATASETS

We obtained usage figures for the Skills Survey (2001) from UK Data Archive. They show that it is mostly used by academic and government users. These numbers provide an extreme lower bound of usage since in some cases the dataset may be shared across a whole academic or government department. Users do not have to pay to obtain datasets from the UK Data Archive.

MEASUREMENT OF THE VALUE OF EVENTS

Skope have a wide variety of events. We were able to classify all of these into conferences, industry forums and workshops. We found the following totals for each category of events (Table 33).

	2004	2005	2006
Conferences	6	7	9
Workshops	2	2	5
Industry forums	2	2	2

Table 33: Skope public events

We had an almost complete set of attendees for Skope's Employers' Forums (which we have classified as Industry forums because of their business link) and Skope's Public Policy Forums (which have been placed in our workshop category). We were only missing one attendee list for one Public Policy Forum in 2006. The attendees at these events could be categorised according to their type, for example, civil servant, academic or business, and the cost of their time calculated according to the appropriate average wage rate for their group.

Skope also hold a wide range of other conferences, workshops and industry forums, and for these we only had attendee lists for two conferences in 2006. Because of the quantity of missing information, we contacted senior Skope members to provide estimates of attendees at different events. We then calculated the cost of time of these attendees using the average wage rate for the UK. We found the following total attendances at all Skope events, based on the attendee lists and the estimated attendance figures (Table 34 below).

	2004	2005	2006
Conference attendees	164	204	376
Workshop attendees	46	48	95
Industry forum attendees	44	44	44

Table 34: Events usage (Skope)

The value of all Skope events was then given by the combination of the cost of time of those on the attendee lists, and the cost of time of the estimated attendance where no attendee lists were provided. We used the average wage rate for those users whose details were not known. This gave the following value information broken down by type of event (Table 35).

	2004	2005	2006
Conferences and seminars	£5234	£6511	£11846
Industry forums	£688	£654	£2688
Workshops	£591	£691	£820*

Table 35: Skope conferences, workshops, industry forums and other public events

* Missing attendee information

MEASUREMENT OF PHDS AWARDED

We used information taken directly from Skope's annual reports 2004-06.

FRONTIER ECONOMICS EUROPE

BRUSSELS | COLOGNE | LONDON | MADRID

Frontier Economics Ltd 71 High Holborn London WC1V 6DA
Tel. +44 (0)20 7031 7000 Fax. +44 (0)20 7031 7001 www.frontier-economics.com