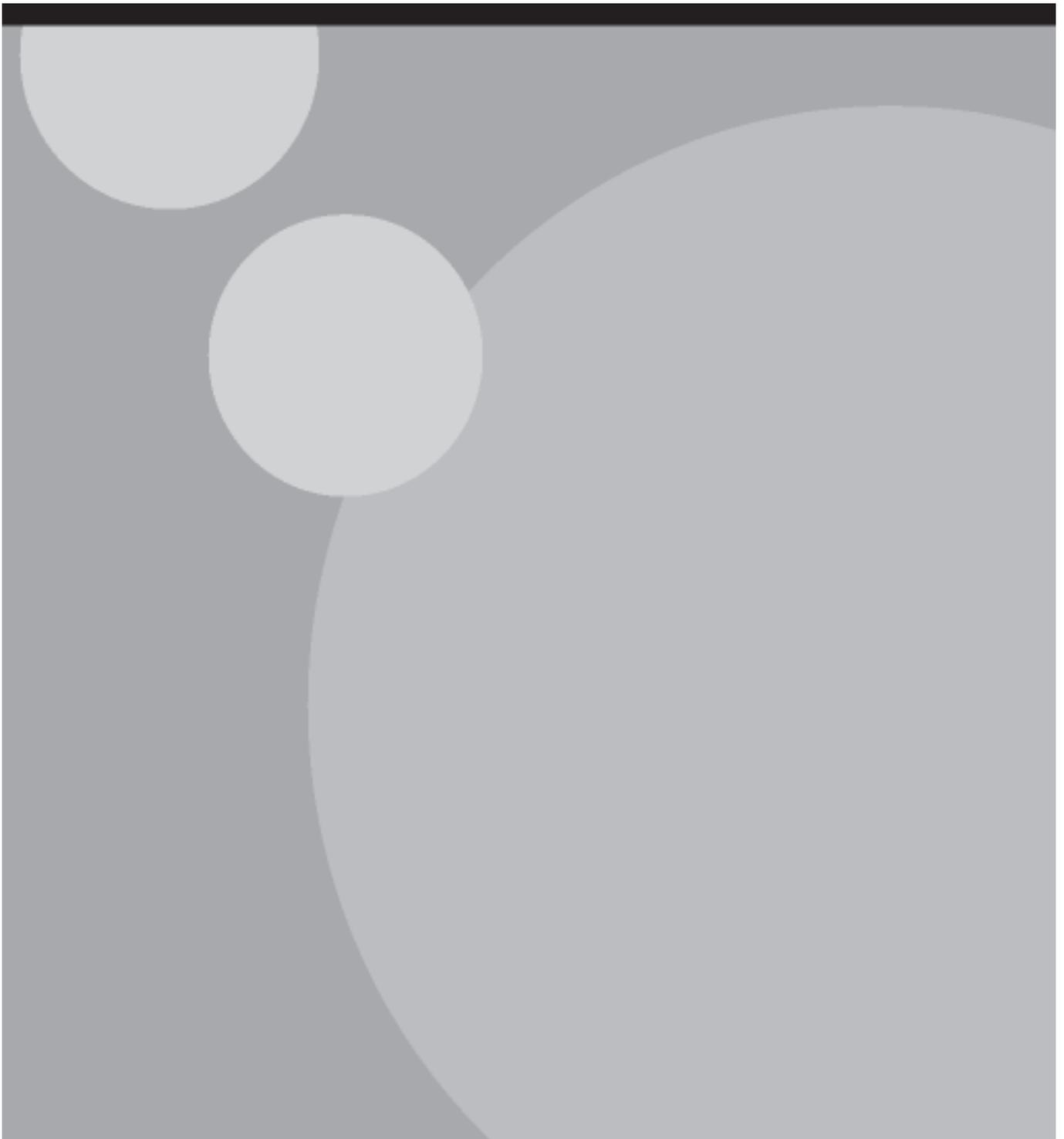




Valuing the Benefits of Regeneration

Economics paper 7: Volume I - Final Report





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December 2010
Department for Communities and Local Government

This research was commissioned by the previous government.

The findings and recommendations in this report are those of the authors and do not necessarily represent the views of the Department for Communities and Local Government.

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Foreword

Using evidence and analysis is at the heart of what we do in the Department for Communities and Local Government (DCLG). The Department has an active research programme covering a wide range of policy issues and economic analysis forms an important part of that work. Recognising the challenges posed by the current economic circumstances, it is particularly important to rigorously assess the costs and benefits of government policy, understand the choices and tradeoffs in reaching policy decisions and consider how regulation and incentives might affect behaviour.

We are publishing a series of Economics Papers, highlighting key pieces of analytical work undertaken within or on behalf of the Department. These papers will range across the broad policy spectrum for which the Department is responsible, including spatial policies, housing, planning, migration, regeneration, cohesion and local government.

This paper is the seventh in the DCLG Economics Paper Series. It was commissioned to improve the evidence base for, and approaches to, quantifying and applying monetary values to the benefits of regeneration interventions. It captures the results of a comprehensive study of the evidence base to look at the methods and results of evaluations of regeneration schemes across government. It observes the strengths, weaknesses and gaps, and calculates high level estimates for benefit cost ratios and value for money both generally and for specific types of scheme.

Given recent developments in policy, including the Big Society and the shift from Regional Development Agencies towards Local Economic Partnerships and the inception of the Regional Growth Fund, the findings of the study will be of practical interest to local practitioners for helping develop their appraisal mechanisms, as well as to policymakers across central government.

We hope that you find this paper of interest, and would be happy to receive comments and reactions to this and subsequent papers in the series.

Electronic copies of this and earlier reports can be downloaded from our website. www.communities.gov.uk/corporate/researchandstatistics/research1/economicpapers/

Please contact us at analytical.services@communities.gsi.gov.uk if you wish to be added to the mailing list for these reports.

Grant Fitzner

Chief Economist and Director of Analytical Services
Department for Communities and Local Government

Preface

The research has been undertaken by a team led by Professor Peter Tyler (Project Director), Colin Warnock (Project Manager) and Angela Brennan from Cambridge Economic Associates (CEA), in association with Allan Provins and Zara Phang from Economics for the Environment Consultancy Ltd (eftec), Peter Wells, Ian Cole, Jan Gilbertson, Tony Gore and Richard Crisp from the Centre for Regional Economic and Social Research (CRESR) at Sheffield Hallam University, Anne Green from the University of Warwick and Mike May-Gillings from Cambridge Econometrics.

The research team is grateful for the assistance of an Expert Panel which comprised Professor Ken Willis (Newcastle University), Professor Jennifer Roberts (University of Sheffield), Professor Roger Bowles (York University), Dr Daniel Graham (Imperial College), and Bobby Duffy (NOP/MORI).

The research was overseen by a steering group that comprised Demelza Birch, Lucy Spurling, Graham Kinshott, Alice Clarke, Andrew Paterson and Alice Darley from the Department for Communities and Local Government, and Jo Brotherhood from the Homes and Communities Agency.

The research benefited greatly from an Expert Workshop held on the 26 March 2010 which was attended by:

Prof Ken Willis	Newcastle University
Jennifer Roberts	University of Sheffield
Mike Daly	Department for Work and Pensions
Joe Clease	Department for Work and Pensions
Daniel Fujiwara	Department for Work and Pensions
Ross Campbell	Department for Work and Pensions
Jo Brotherhood	Homes and Communities Agency
John Davies	English Heritage
Roger Bowles	York University
Carol Murray	Department for Business, Innovation and Skills
Roger Wilshaw	Department for Communities and Local Government
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Phillip Adams	Department for Communities and Local Government
Demelza Birch	Department for Communities and Local Government
Alice Clarke	Department for Communities and Local Government
Lucy Spurling	Department for Communities and Local Government
Andrew Amerasekera	Department for Communities and Local Government
Graham Kinshott	Department for Communities and Local Government

The research team would like to acknowledge the valuable contribution of all those who contributed to the research.

Executive summary

Background and study objectives

1. In October 2009, the Department for Communities and Local Government (DCLG) commissioned this study to examine how the benefits of regeneration might be valued. It is designed to provide an analytical framework that will underpin a programme of research on the value of the benefits from regeneration and how they compare with the relevant costs. The intention is to establish a robust evidence base, identify potential challenges and provide constructive suggestions on how these could be overcome.
2. The research has been undertaken by a team led by Professor Peter Tyler (Project Director), Colin Warnock (Project Manager) and Angela Brennan from Cambridge Economic Associates (CEA), in association with Allan Provins and Zara Phang from eftec, Peter Wells, Ian Cole, Jan Gilbertson, Tony Gore and Richard Crisp from CRESR at Sheffield Hallam University, Anne Green from the University of Warwick and Mike May-Gillings from Cambridge Econometrics.
3. The focus of the research has been on developing a practical methodology with which to place an **economic** value on the benefits that are produced by regeneration policies in line with the recommendations of HM Treasury (HM Treasury Green Book¹). More specifically, the main objectives of the research were to:
 - develop a conceptual framework that could be used to value the benefits of regeneration
 - review and assess the existing evidence base in relation to valuing regeneration. To assist in this process, the study team benefited from an Expert Panel of leading academics in the fields of health, crime, transport and environmental economics
 - pilot approaches to assigning a monetary value to the benefits of regeneration
 - make recommendations to improve the appraisal and evaluation of regeneration to enable better quantification of benefits and the assignment of regeneration outcomes.

¹ HM Treasury (2008) *The Green Book. Appraisal and Evaluation in Central Government*. Treasury Guidance. London: TSO. www.hm-treasury.gov.uk/d/green_book_complete.pdf

4. The research has **not** been concerned with:
 - comparing the value of the benefits from regeneration with the value of benefits produced by other forms of public intervention
 - establishing the overall fiscal cost to the tax-payer from regeneration initiatives (although some attention has been given to the fiscal impact of policies designed to tackle worklessness)
 - the impact of regeneration initiatives on the wider flows of public expenditure in regeneration areas.
5. It is also important to emphasise that **the work has focused on the development of an analytical framework that can be populated with more robust evidence from further research and evaluation**. The unit costs, unit values and Benefit Cost Ratios that are presented in this report are only **illustrative**. They are based on readily available evidence. At the present time this is limited for some regeneration activities due to a paucity of good quality evaluation material. Recommendations are made later for areas where the evidence base needs to be strengthened.
6. One outcome of the work thus far is that the valuation framework and its methodology have been used by the Homes and Communities Agency to underpin its cost benefit analysis framework guidance.

Measurement issues

7. In defining the scope of regeneration activity it is important to reflect and incorporate the current thrust of regeneration policy as it has evolved over recent years in England and thus its main dimensions. It is also necessary to consider the diversity of regeneration activity and ensure that each element is classified in an appropriate manner that recognises the contribution it makes to both people and places.
8. Regeneration covers a broad range of public policy. The 3Rs Guidance² defines regeneration as being *“a holistic process of reversing economic, social and physical decay in areas where it has reached a stage when market forces alone will not suffice”*. The recently elected Coalition Government in the United Kingdom has confirmed its commitment to regeneration emphasising that *“regeneration can help us make the best of our assets and our people. It can help areas adapt to new roles, and improve the distribution of wealth and opportunity. It can restore social justice, and reduce community tensions. And as the country adapts to a smaller state, regeneration can play a vital role for communities, by fostering a sense of solidarity and hope.”* (Ministerial statement at the National Regeneration Summit, 14 July, 2010).

² ODPM (2004) *Assessing the impact of spatial interventions. Regeneration, renewal and regional development. ‘The 3Rs guidance’*. London: Office of the Deputy Prime Minister.

9. Essentially regeneration is about closing gaps. It is most concerned with delivering impacts on targeted regeneration areas (typically at the sub-district level) or particular groups in society (e.g. those without work) such that their prospects are enhanced. The rationale for intervention on the part of Government has been heavily influenced by the need to overcome market failure and the achievement of an equity objective, such as local or regional regeneration (HM Green Book, p.51). There has been general agreement that successful regeneration is about achieving additional economic, social and environmental outcomes that would not otherwise have occurred (or which would have been delivered later or of a lower quality) whilst also representing good Value for Money for the public investment.
10. A number of measurement issues arise in seeking to value the benefits of regeneration and they are discussed in Section 3 of this Report. It is important to capture the range and diversity of regeneration benefits, recognising that a number of different markets and types of beneficiary may be affected. Some categories of benefit may develop faster than others and persist for different periods of time. Moreover, not all the benefits produced are additional in the sense that they would not otherwise have been there in the absence of the intervention, so it is necessary to take account of factors such as deadweight, displacement and leakage. The benefits from regeneration can be considered at different spatial levels, and for different groups in society and it is important to be able to attribute impact and avoid double-counting. In this research the main focus has been at the level of the **sub-region**. It has not been analysed at the regional level since the policy objective has been local level regeneration.

Regeneration process vs. regeneration product

11. The benefits of regeneration arise as a result of the **regeneration delivery process**. A core objective of a regeneration initiative may be to enhance this by encouraging more partnership working or 'bending' mainstream expenditure. Such **strategic added value (SAV)**³ is an essential part of ensuring that relatively depressed places continue to improve and that the need for government intervention is reduced. Much research has been undertaken to assess the importance of these factors in regeneration. This report is not concerned with valuing the delivery process as such, but rather the end result - the regeneration product.

Defining the pathways

12. A key factor that has influenced our thinking is that valuation issues need to be considered alongside current thinking on how regeneration activity is evaluated. For each type of regeneration activity, it ideally needs to specify a logical pathway from **inputs through activities to outputs, outcomes, impacts and value** as described

³ BIS (2005) *England's Regional Development Agencies RDA Corporate Plans for 2005-2008 Tasking Framework*. London: Department for Business, Innovation and Skills. www.bis.gov.uk/files/file26126.pdf

in the Green Book and the 3R's Guidance produced by DCLG.⁴ These pathways reflect the 'theory of change', i.e. the specific ways in which different types of regeneration activities bring about change for people or places in local regeneration areas. The links between the individual elements are usually spelt out in a 'logic chain'.

13. In designing a methodology to assess the **direct benefits** of regeneration policy it was important to use two central pieces of information that are well understood by the relevant policy and research communities. The first is the **cost to the public sector of creating the additional benefit** (the cost per job, cost per hectare of open space improved etc.). The second is the **value that society assigns to each benefit produced** (the value of a job, the environmental improvement etc.). The research presented in this Report describes the methodology. It then assembles the known evidence on both the first and second key parameters (central estimates with identified ranges, as well as cautious estimates) and produces Benefit Cost Ratios that summarise the value to society of adopting the policies concerned. The approach adopted is such that as new evidence on key parameters becomes available it can be plugged into the research method and the overall effect on the relevant Benefit Cost ratios assessed.
14. Where possible the research has recognised that beyond the **direct** benefits for people or places, regeneration initiatives may also have **indirect** effects that benefit society as a whole. The pathways and extent to which these indirect effects arise are often not well understood and in some cases may be difficult to quantify. Thus, by way of example, the provision of better work opportunities and associated higher incomes may improve health and reduce crime. It is important to value these indirect effects if the evidence is available to do this.

Who benefits: the boundaries of economic jurisdiction

15. A central element of all approaches to valuing the costs and benefits of regeneration policy is to identify the relevant party affected. This is not always straightforward. Regeneration activities can be designed to improve the physical and environmental quality of a specific place. In some cases the beneficiaries involved may be fairly readily identified because they are the people who live in the place and there is thus a strong and direct relationship between the intervention and those who benefit. In other cases, however, this relationship is weaker and the beneficiary population may only benefit from improvement in the quality of the place when they visit it, or pass through it on the way to somewhere else.
16. The strengths of these relationships and the spatial boundaries over which the benefits from local regeneration occur have received far too little attention. There may be considerable differences between the spatial boundaries associated with

⁴ ODPM (2004) *Assessing the impact of spatial interventions. Regeneration, renewal and regional development. 'The 3Rs guidance'*. London: Office of the Deputy Prime Minister.

environmental enhancement or benefit relative to those associated with a new training initiative. A key issue is therefore defining the geographic boundaries of **economic jurisdiction**. Again, it should be noted that the study does not consider wider matters such as the benefits to the UK as a whole, or the opportunity costs of regeneration activity compared to other types of public sector intervention.

Additionality

17. A central consideration is the extent to which the outputs and outcomes arising from regeneration activities are 'additional', i.e. the extent to which regeneration has changed behaviour to bring about more, better quality or faster regeneration activities, outputs and outcomes than would otherwise have been the case. Estimating deadweight, then allowing for leakage, displacement, substitution and multiplier effects (where appropriate) is an essential part of the process whereby gross outputs and outcomes are translated into their net additional equivalents. **It is these net benefits that should be valued.** Once they have been valued they can then be considered alongside the public expenditure incurred to create them and expressed as a Benefit Cost Ratio.

Allowing for impacts on different groups in society: distributional impacts

18. Regeneration activity impacts on a diverse range of individuals across society with considerable variation by income, gender, ethnicity, age, geography and disability. HM Treasury's Green Book emphasises that the distributional effects of policy intervention should be identified explicitly and quantified as far as possible. The research presented in this Report has sought to establish the value associated with a **unit** of regeneration benefit. As the Green Book recognises, the **worth** of this benefit may be greater to those on lower incomes who tend to be disproportionately concentrated in the most deprived areas. In our research we have sought to establish the Benefit Cost Ratios associated with regeneration policy without making adjustments to account for any distributional effects. The approach, however, allows a distributional adjustment to be added fairly easily should this be required. The Green Book presents possible adjusters based on family income which reflect the **perceived 'worth' of a unit** of income by quintile. Where it is believed appropriate to allow for distributional issues, the Green Book income adjustment can be combined with the **Benefit Cost Ratios** provided by this research.

Duration, durability and time

19. The impact of regeneration initiatives may build up over a considerable period of time and this has to be recognised in the valuation process. A further issue relates to the durability of the impacts. There are fairly well developed approaches to dealing with these factors and in particular how benefit streams should be discounted and

incorporated into the overall valuation framework (HM Treasury, 2007). The research reported in this Report has applied **both build-up and duration** estimates in assigning value.

Valuation issues

Real resource benefits vs. Exchequer savings

20. The focus of the valuation work has been on the real resource costs and benefits to society that arise as a result of regeneration initiatives. However, in the case of the benefits that arise from reducing worklessness, it was also appropriate to consider the impact of regeneration on bringing about savings in public expenditure (Exchequer savings). Annex B of this Report presents estimates of this.

Market and non-market valuation

21. Many of the benefits from regeneration initiatives can be translated into monetary values because they are traded in markets that provide an indication of their worth. An obvious example is the additional jobs that a regeneration scheme creates. Even when market valuations are believed to be somewhat distorted (e.g. by taxes and subsidies), shadow pricing can be used and there is a substantial literature on how to deal with these issues. **In this research the emphasis has been on using market based valuations wherever possible.**
22. However, where there is not a market valuation a value has to be inferred by using other techniques. These have been fairly well tried and tested and are described in the Green Book, and in far greater detail in the extensive literature that is available on this subject. An obvious example relates to environmental benefits where it is necessary to use techniques such as **contingent valuation, revealed preference or shadow pricing techniques**. This research has undertaken two pilot studies: **a stated preference survey** to develop a stated preference questionnaire to value environmental improvements typically targeted through regeneration activity; and **a hedonic pricing study** to value brownfield land reclamation. The study has also considered the feasibility of using **shadow pricing techniques** by examining its application in the National Evaluation of the New Deal for Communities programme.

Key findings

Regeneration expenditure

23. The research has characterised regeneration activity into broad types. To do this it examined the core regeneration programmes being delivered in England and the public sector expenditure associated with each over the period 2009/10 and 2010/11.

24. Section 2 identifies **three main Themes** of regeneration activity: **Worklessness, Skills and Business Development** (18.8% of public sector expenditure on regeneration in period 2009-2011); **Industrial and Commercial Property and Infrastructure** (11.3% of expenditure); and **Homes, Communities and the Environment** (69.9% of expenditure). Within each of these three over-arching themes eight **Activity Categories** were identified and then a series of **Activity Types**. The study developed logic chains for each of the Activity Types that showed how regeneration investment in each type generates different outputs that in turn contribute to outcome change (see Figure 1).
25. Figure 1 shows the estimated **annual** expenditure on different regeneration activities of approximately £10bn per annum, based on our assessment of programme budgets over the two years of 2009/10 and 2010/11.

Figure 1: Estimate of annual core regeneration expenditure by activity (based on 2009/10 and 2010/11)		
Regeneration Theme and Activity Category	£m p.a.	%
Theme 1. Worklessness, skills and business development	1894	18.8%
Worklessness, skills and training	629	6.2%
Enterprise and business development	1266	12.5%
Theme 2. Industrial and commercial property and infrastructure	1143	11.3%
Industrial and commercial property	761	7.5%
Infrastructure	382	3.8%
Theme 3. Homes, communities and the environment	7052	69.9%
Housing growth and improvement	6479	64.2%
Community development	35	0.3%
Environmental improvement	430	4.3%
Neighbourhood renewal	109	1.1%
Total	10,090	100.0%
NB Please note that due to rounding some figures may not sum exactly to the stated totals		

26. The evidence presented in Part II of the main report indicates that **it is possible to value the benefits arising from the majority of this expenditure**. A number of different approaches and techniques have been used. As noted above, wherever possible the valuation has been based on readily available market information. However, in several areas, such as improvements to the environment and derelict properties, it is necessary to use established analytical techniques such as stated preference.
27. Sections 4, 5, 6 and 7 describe the approach to assigning value across the three main themes that underpin regeneration activity in England. The approach adopted uses two key pieces of evidence. The first is the public sector cost of producing an additional regeneration output. This information is used to generate the overall number of **additional** outputs that it is believed that the expenditure associated with regeneration has created. The second is the **value** that should be assigned to this

additional regeneration output. The future stream of benefits reflects a judgement as to how long they take to build up and how long they last. The stream is discounted to a Present Value. Dividing the Present Value of benefits by the annual public sector expenditure required to generate those benefits enables a Benefit Cost Ratio to be calculated.

Estimating net additional outputs

Variations in unit cost

28. The volume and type of net additional outputs may already be known directly from appraisal or evaluation work. In this study we began with estimates of regeneration expenditure by activity in recent years. It was necessary to assemble available evidence on unit costs by activity in order to illustrate a plausible range on the volume of outputs that might be generated.
29. The number of observations on which that unit cost analysis is based is reasonable for some activities (20+observations) and, in a few cases, highly limited. This reflects the paucity of the evidence base and, as we discuss, highlights the need for more robust evaluation evidence to fill key gaps in the knowledge base. However, we are content that the evidence used is helpful in illustrating how the analytical framework can be used across a wide range of regeneration activities.
30. The report also highlights some of the common factors which can influence unit costs. Often these relate to the degree of market failure. In the case of tackling worklessness, the unit cost of getting an individual into work will depend on their preparedness to enter the labour market. For industrial and commercial property the degree of decontamination and site servicing and the strength of the property market will be key factors in determining unit costs. For business support activity the level of advice and support provided to a business to help it set up or become more competitive and the private sector's ability to pay for such services will be key factors.
31. Unit costs will also vary depending on the additionality of the intervention which in turn will relate to how well the intervention is targeted in its design and operation to tackle the market or equity failures.

Applying unit costs to generate net additional outputs

32. Having estimated a range on unit cost, for a given level of public sector expenditure on each regeneration activity we have then estimated the volume of net additional outputs generated. In Section 8, Figure 8.2 presents estimates of the net additional outputs from one year of recent UK regeneration expenditure, based on the low, average and high unit costs presented in Figure 8.1.

Assigning values

33. The second part of the framework requires a monetary value to be assigned to each net additional output. In most cases this is expressed as a value per annum. As noted earlier, assumptions also need to be applied regarding how quickly the benefits build up and their duration. In Sections 4-7 of this Report, a set of central valuation assumptions are applied for each main activity type as well as a sensitivity analysis of value based on variations in durability, earnings and Gross Value Added.

Benefit Cost Ratios

34. Applying these valuation assumptions to the net additional outputs generates a stream of benefits over time that is discounted to a Present Value using HM Treasury's Social Time Preference Rate of 3.5 per cent. The Present Value of benefits can then be divided by the annual public expenditure that generated the benefits to calculate a Benefit Cost Ratio. Figure 2 brings together the Benefit Cost Ratios for each of the activities, drawing on the methods and evidence set out in Sections 4 to 7 of this report. The results are based on average unit costs. A lower unit cost would generate more net additional outputs and lead to a higher Benefit Cost Ratio. The opposite would be true of a higher unit cost.

Figure 2: Benefit Cost Ratios by Activity Type – central and cautious valuation applied to outputs derived using average unit costs			
Activity type	Valuation basis	Central valuation	Cautious valuation
Theme 1: Worklessness, skills and business development			
Tackling worklessness	Consumption benefits (earnings) plus indirect crime and health benefits	1.04	1.04
Skills and training	Production benefit - Earnings uplift arising from skills enhancement	2.2	1.6
General business support	Production benefit - GVA	8.7	6.0
Start-up and spin-outs	"	9.3	6.8
Business enterprise research & development	"	2.5	1.8
Theme 2: Industrial and commercial property			
Industrial and commercial property	Production benefit - GVA	10.0	5.8
Theme 3: Homes, communities and environment			
New build housing	Consumption (property betterment) and production benefits (GVA)	2.6	1.7
Housing improvement	Consumption benefits - property betterment and social benefits	2.0	1.3
Acquisition, demolition and new build	Consumption benefits - property betterment and visual amenity enhancement	5.5	3.7
Communities: Volunteering	Shadow price of volunteer inputs - minimum wage	1.1	1.1
Communities: investing in community organisations	Shadow price of social enterprise 'GVA'	1.8	1.3
Environmental: open space	Consumption benefits - Willingness To Pay	2.7	1.8

Figure 2: Benefit Cost Ratios by Activity Type – central and cautious valuation applied to outputs derived using average unit costs			
Activity type	Valuation basis	Central valuation	Cautious valuation
Environmental: public realm	Consumption benefits - Willingness To Pay	1.4	0.9
Neighbourhood renewal	Consumption benefits - value transfer from NDC evaluation which adopted shadow pricing approach	3.0	3.0
All Activity Types (real resource)		3.5	2.3

35. Based on cautious valuation assumptions, and **on readily available evidence assembled to illustrate how the methodology can be used, the overall Benefit Cost Ratio associated with regeneration expenditure is estimated to be 2.3.** This seems entirely plausible given the evidence available from primary research, examples cited elsewhere and the fact that these benefits are occurring over several years, in some cases up to 30 years (for housing, open space and public realm activity).
36. It is also the case that the Benefit Cost Ratios will vary by geography. This is because Gross Value Added, earnings and land values vary across England.

Strengthening the evidence; a future research agenda

37. Part III of the main report outlines an agenda for future research which can build on the evidence base and strengthen it. It also highlights a number of key areas where the valuation estimates could be used in appraisal and evaluation.
38. Overall, the research has been able to place a value on most of the benefits that are identified to arise from regeneration initiatives funded by HM Government, and in the majority of cases it is possible to do this using market based evidence. The research has highlighted the importance of establishing who the beneficiaries are and their characteristics, what the spatial boundaries of the relevant interactions are, and ensuring that there is an assessment of additionality and the likely duration of the benefits that arise.
39. The pathways between regeneration activity and the *outputs* that they create have probably been the most extensively researched in *evaluation work* to-date. However, the links between regeneration activities and their impact on the relevant *outcomes* are a lot less well researched. An example of this is the link between interventions in the labour market to enhance skills and the impact that they have on worklessness. More research is needed to understand the strength of these relationships, but it is recognised that there are considerable conceptual and measurement problems that have to be overcome.

40. The research has indicated that there are some streams of benefit that arise from regeneration activity for which market based information is not readily available and where alternative methodologies are needed for valuation. Perhaps the most obvious example of this is the consumption benefit from enhanced environmental amenity and this research has been able to show how the stated preference technique can be used in this respect. However, there are other areas that should be considered. These include the benefits of community participation and volunteering, the benefits to businesses of agglomeration and other 'wider achievements' that can arise from enhanced access and proximity. These are all areas that require further research.
41. Our recommendations for future research are based on the findings from pilot work using both the stated preference and hedonic pricing techniques. The objective has been to establish what is required to generate estimates of the value associated with environmental improvements that can be widely applied in both the appraisal and evaluation of regeneration schemes. On balance, the research tended to support the application of the stated preference technique because of its inherent flexibility in customising to the circumstance of the individual regeneration scheme and type of beneficiary.
42. However, there were also advantages from adopting hedonic pricing where it was felt that sufficient time had elapsed for the impact of regeneration to emerge in prices. The pilot hedonic pricing study used house prices as the variable with which to measure impact since the objective was to assess how environmental improvement had affected the desire of local residents to want to live near it. In other cases it may be more appropriate to use land values as when the regeneration scheme has been concerned to stimulate the commercial property market.
43. With respect to the application of both stated preference and hedonic pricing techniques there is an urgent need to assess environmental amenity impacts in areas that have quite different underlying characteristics. These issues are discussed at length in Section 9 of this Report.
44. Actions to reduce worklessness provide direct benefits to people that are reflected in labour markets and it is possible to value these. However, as we noted earlier, there are also indirect benefits to society associated with more people in work. Some of the most important of these relate to improved health and reduced crime and Section 4 has sought to value these effects based on research undertaken by the Department for Work and Pensions. This is also an area that would benefit from more research being undertaken across government.

Strengthening regeneration appraisal and evaluation practice

45. The study has flagged up the important role of logic chains in the valuation process and reinforced the central function that these play at both the appraisal and evaluation stage. There is a continuing desire to express the effectiveness of regeneration interventions through a net impact on outcomes. However, at the present time the causal links and quantitative relationships between outputs and outcomes remain fragile or untested in some cases. A key benefit of output-based valuation is its ability to enable a refined valuation process through a better understanding of beneficiary characteristics (e.g. occupation, sector, location). However, this is only possible if evaluations themselves capture data on beneficiary characteristics on a consistent basis.
46. The Green Book has encouraged the use of valuation and cost benefit analysis for many years. There has been no shortage of guidance promoting the approach in general, but there has been a dearth of practical material to support the consistent application of key techniques in common areas of regeneration intervention. It is hoped that this study will go some way towards filling this gap. However, we believe that there remains a need for cross-governmental guidance of a practical nature that sets out in clear terms those techniques that are regarded as valid by HM Treasury and key sponsor departments such as DCLG.
47. It is important to reinforce the important role of evaluation in filling key gaps in valuation knowledge, as well as deepening the evidence base to provide better evidence of variation by geography and key beneficiary groups. There is an important role for the use of social surveys, both of direct beneficiaries for interventions targeted on individuals and businesses and of residents likely to be affected by place-based interventions. There is also scope for more standardisation of key questionnaires for evaluations in other themes and Activity Categories, particularly those concerned with tackling worklessness, housing improvements and enhanced open space and public realm. The role of social surveying in developing the evidence base is crucial, but budget pressures may well limit the scope of any one Department or agency to undertake the level of work required to provide estimates capable of disaggregation (e.g. both geographically and by type of activity). To this end we believe there is real scope for the co-ordination of valuation-related research activity, particularly between DCLG, the Department for Environment, Food and Rural Affairs, the Department for Business, Innovation and Skills and the Homes and Communities Agency to ensure that what work is commissioned is of a sufficient scale and quality to be capable of widespread application by the sector.

Part I

A Framework for Valuing Regeneration

1. Introduction

Background and study objectives

- 1.1 In October 2009 the Department for Communities and Local Government (DCLG) commissioned this study to examine how the benefits of regeneration might be valued. It is designed to provide an analytical framework for valuing the benefits from regeneration and how they compare with the relevant costs. The intention is to establish a robust evidence base, identify potential challenges and provide constructive suggestions on how these could be overcome.
- 1.2 The focus of the research has been on developing a practical methodology with which to place an **economic** value on the benefits that are produced by regeneration policies in line with the recommendations of HM Treasury (HM Treasury Green Book⁵). More specifically, the main objectives of the research were to:
- develop a conceptual framework that could be used to value the benefits of regeneration
 - review and assess the existing evidence base in relation to valuing regeneration. To assist in this process, the study team benefited from an Expert Panel of leading academics in the fields of health, crime, transport and environmental economics
 - pilot approaches to assigning a monetary value to the benefits of regeneration
 - make recommendations to improve the appraisal and evaluation of regeneration to enable better quantification of benefits and the assignment of regeneration outcomes.
- 1.3 The research has **not** been concerned with:
- comparing the value of the benefits from regeneration with the value of benefits produced by other forms of public intervention
 - establishing the overall fiscal cost to the tax-payer from regeneration initiatives (although some attention has been given to the fiscal impact of policies designed to tackle worklessness)
 - the impact of regeneration initiatives on the wider flows of public expenditure in regeneration areas.

⁵ HM Treasury (2008) *The Green Book. Appraisal and Evaluation in Central Government*. Treasury Guidance. London: TSO. www.hm-treasury.gov.uk/d/green_book_complete.pdf

- 1.4 It is also important to emphasise that **the work has focused on the development of an analytical framework that can be populated with more robust evidence from further research and evaluation**. The unit costs, unit values and Benefit Cost Ratios that are presented in this report are only **illustrative**. They are based on readily available evidence. At the present time this is limited for some regeneration activities due to a paucity of good quality evaluation material. Recommendations are made later for areas where the evidence base needs to be strengthened.
- 1.5 One outcome of the work thus far is that the valuation framework and its methodology have been used by the Homes and Communities Agency to underpin its cost benefit analysis framework guidance.

Why do the benefits of regeneration need to be valued?

- 1.6 There has been much work devoted to evaluating the achievements of regeneration initiatives. The key steps have been discussed at length in documents such as the Green Book and the 3R's Guidance produced by DCLG,⁶ which replaced the HM Treasury EGRUP Guidance.⁷ Most recently the Cabinet Office has produced *A Guide To Social Return on Investment*.⁸ Guidance has been produced by the Homes and Communities Agency to help assess the additionality of regeneration activities⁹ and the Department for Business, Innovation and Skills have commissioned further research into the additionality associated with economic development and regeneration projects, building on the extensive database produced as part of the recent Regional Development Agency Impact Evaluation.¹⁰
- 1.7 The rationale for Government regeneration interventions has played heavily to the need to overcome market failure and the achievement of an equity objective, such as local or regional regeneration (HM Green Book, p.51). There has been general agreement that successful regeneration is about achieving additional economic, social and environmental outputs and outcomes that would not otherwise have occurred (or which would have been delivered later or of a lower quality).
- 1.8 Regeneration initiatives should seek to be cost-effective and represent good Value for Money. As part of the assessment of Value for Money, HM Treasury is unequivocal that benefits should be valued: *"The general rule is that the benefits should be valued unless it is clearly not practical to do so. Even if it is not feasible or practicable to value*

⁶ ODPM (2004) *Assessing the impact of spatial interventions. Regeneration, renewal and regional development. 'The 3Rs guidance'*. London: Office of the Deputy Prime Minister.

⁷ HM Treasury (1995) *A framework for the evaluation of regeneration projects and programmes (EGRUP)*. London: HM Treasury.

⁸ The Cabinet Office (2009) *A guide to social return on investment*. London: Cabinet Office (Office of the Third Sector). www.neweconomics.org/sites/neweconomics.org/files/A_guide_to_Social_Return_on_Investment_1.pdf

⁹ English Partnerships (2008) *Additionality Guide: A standard approach to assessing the additional impact of interventions. Method Statement*. Third Edition. London: English Partnerships.

¹⁰ BIS (2009) *Research to improve the assessment of additionality. Final Report*. London: Department for Business, Innovation and Skills.

all of the benefits of a proposal, it is clearly important to value the difference between options” (HM Treasury Green Book, p.21).

- 1.9 Given the guidance contained in the Green Book it would seem an obvious question to ask why there is so little evidence available on the value of regeneration benefits. A number of conceptual and measurement problems can be identified.
- 1.10 One immediate factor is that regeneration initiatives are usually associated with a very wide and diverse range of physical, economic and social impacts. Some have explicit economic objectives and thus seek to create jobs, either directly or indirectly, and stimulate growth by enhancing business competitiveness. Many schemes improve the environment and stimulate the workings of land, property and particularly housing markets. An increasing number are engaged with a broad social agenda that works to improve health, reduce crime, build social capital and much more besides. In terms of the sheer spread of objectives, the Single Regeneration Budget was a classic example of the diversity of regeneration activity that could be pursued.¹¹ Other reasons for the lack of evidence include the high cost of undertaking primary data collection.
- 1.11 Where possible this study has sought to value the benefits of regeneration using market based data. This is in line with Treasury Guidance. However, in other cases, market based information with which to value the benefits of regeneration is not readily available and the research investigated the feasibility of using other approaches. The research has undertaken two pilot studies: a stated preference survey to value environmental quality and amenity improvements of regeneration schemes; and a hedonic pricing study to assess the scope for placing values on brownfield land reclamation. The pilot stated preference work was undertaken in Seaham in East Durham. This area was selected because it has been the focus of significant physical regeneration resources covering a variety of different environmental improvements. As a pilot study it was important that the work could be undertaken in a cost-effective manner and thus identify participants likely to be knowledgeable of the regeneration activities concerned to inform questionnaire design. As a relatively small town, the chosen case-study area also benefited from not having the background ‘noise’ associated with larger urban areas, which might have distorted the results of the pilot study
- 1.12 The approach adopted in the stated preference work combined both choice experiment and contingent valuation methods to give a flexible survey instrument capable of valuing local environmental amenity attributes individually and ‘packages’ of improvements covering multiple attributes. The work was designed as a pilot study that could then lead to a full scale survey to generate valuation evidence for general

¹¹ Dept of Land Economy (2009) *The Single Regeneration Budget: Final Evaluation*. Cambridge: Department of Land Economy.

use in appraisal and evaluation of regeneration schemes.

- 1.13 The pilot hedonic pricing study sought to examine the impact of a major brownfield reclamation project on house prices in the adjacent residential area of Hebburn in South Tyneside. The former Monkton Coke Works was selected because it involved the reclamation of a sizeable and well known area of brownfield land, was adjacent to a relatively stable area of housing which was not dominated by new residential development (since this would distort the housing market) and because the activities were undertaken sufficiently long ago for there to be a sufficient number of housing transactions through which to observe any price effects.

Report structure

- 1.14 The report consists of two volumes. This Final Report (Volume I) summarises the main findings of the study. Volume II sets out the framework in more detail and reviews the available evidence to provide a detailed discussion of the valuation issues and options. In addition, a Technical Report provides a detailed account of the pilot stated preference and hedonic pricing studies undertaken as part of the research.
- 1.15 Volume I is structured in three parts as follows:
- **Part I: A framework for valuing regeneration** describes the nature of regeneration activity in England and summarises how it has been defined for the purposes of this study. It considers the core regeneration programmes being delivered in England and the total expenditure associated with each over the period 2009/10 and 2010/11 and defines three regeneration themes (Section 2). It then discusses the measurement and valuation issues which need to be addressed (Section 3).
 - **Part II: Bringing the evidence together**, takes the three regeneration themes in turn (Sections 4, 5, 6 and 7). For each one it provides an overview of the regeneration activity and how it is expected to bring about benefits (its logic chain); summarises the approach and methods used to assign values and presents our findings regarding the value of regeneration. Section 8 then summarises the evidence across all three themes.
 - **Part III: Strengthening the evidence**, highlights the key gaps in the evidence base and sets out an agenda for future research in this area (Section 9). The report concludes with recommendations on how appraisal and evaluation practice could be strengthened to gather new evidence and apply existing evidence more systematically (Section 10).

2. Regeneration activity and expenditure

Introduction

- 2.1 This section outlines the scope of regeneration activity and summarises how it has been defined for the purposes of this study. It goes on to identify the core regeneration programmes being delivered in England and sets out how much expenditure in total is associated with each over the period 2009/10 and 2010/11. Finally, it reports on a preliminary analysis of regeneration expenditure according to the Activity Categories and Activity Types developed as part of this study. This shows broadly where regeneration spending is going and thus where it made the most sense to focus greatest effort in seeking to assign value to the benefits produced.

The scope of regeneration

- 2.2 In defining the scope of regeneration activity it is important to reflect and incorporate the thrust of regeneration policy as it has evolved over recent years in England and thus its main dimensions. It is also necessary to consider the diversity of regeneration activity and ensure that each element was classified in an appropriate manner that recognises the contribution it makes to people and place.
- 2.3 Regeneration covers a broad range of public policy. The 3Rs Guidance¹² defines regeneration as being *“a holistic process of reversing economic, social and physical decay in areas where it has reached a stage when market forces alone will not suffice”*. (Ibid. p.41). The recently elected Coalition Government has recently confirmed its commitment to regeneration emphasising that *“Regeneration can help us make the best of our assets and our people. It can help areas adapt to new roles, and improve the distribution of wealth and opportunity. It can restore social justice, and reduce community tensions. And as the country adapts to a smaller state, regeneration can play a vital role for communities, by fostering a sense of solidarity and hope.”* (Grant Shapps’ Ministerial statement at the National Regeneration Summit, 14 July, 2010).
- 2.4 Essentially regeneration is about closing gaps. It is most concerned with delivering impacts on targeted regeneration areas (typically at the sub-district level) or particular groups in society (e.g. those without work) such that their prospects are enhanced. There has been general agreement that successful regeneration is about achieving additional economic, social and environmental outcomes that would not otherwise

¹² ODPM (2004) *Assessing the impact of spatial interventions. Regeneration, renewal and regional development. ‘The 3Rs guidance’*. London: Office of the Deputy Prime Minister.

have occurred (or which would have been delivered later or of a lower quality) whilst also representing good Value for Money for the public investment.

- 2.5 The objectives of regeneration programmes are identified by HM Treasury as *“likely to include improvements in one or more of labour supply skills, quality of life, physical environment and local business opportunities”* (HM Treasury, Green Book, p.55¹³). It is argued that regeneration outcomes might include reducing crime, improving the capacity of community organisations and increasing incomes and employment. Mention is also made of the importance of regeneration securing possible institutional benefits that might arise from, for instance, enhanced partnership working (Ibid. p.55).
- 2.6 The Green Book also recognises that *“Government intervention in the economy is sometimes undertaken with an employment objective in mind, in other cases, although employment is often retained as a principal objective, the justification is more far-reaching and the objectives tend to be more broadly cast. This is typical of regeneration projects. Where programmes have multiple objectives, such as environmental improvements, these other additional benefits (and any associated costs) should be covered in the appraisal, together with their employment impacts. The geographical focus of regeneration projects means that it is particularly important to assess displacement effects at both the local and national levels, particularly if the programme or project is substantial.”* (Ibid. p.55).
- 2.7 Recently the Department for Transport has also been seeking to understand more about the relationship between investment in transport and possible impacts on the regeneration of relatively depressed areas. This work is part of research designed to value what were originally identified as the ‘wider achievements’ of investment in transport infrastructure in the work by the Standing Advisory Committee on Trunk Road Assessment.¹⁴ It has been recognised that transport investment may be able to create benefits to society that are over and above the standard generalised cost savings that come about with savings in travel time. These wider achievements have been suggested to include productivity gains to business that may arise from the realisation of agglomeration benefits, effects on labour supply, the movement of workers between jobs with different levels of associated productivity and benefits to the regeneration of run-down economies (DfT, 2009).¹⁵
- 2.8 During the first part of the research, regeneration activity was categorised into three Themes covering eight Activity Categories (Figure 2.1). The Activity Categories in turn comprise a total of 46 Activity Types which we present later in the section.

¹³ HM Treasury (2008) *The Green Book. Appraisal and Evaluation in Central Government*. Treasury Guidance. London: TSO. www.hm-treasury.gov.uk/d/green_book_complete.pdf

¹⁴ SACTRA (1999) *Transport and the Economy*, SACTRA (Standard Advisory Committee on Trunk Road Assessment). London: Department of the Environment, Transport and the Regions.

¹⁵ DfT (2009) *Wider impacts and Regeneration*. London: Department for Transport (TAG Unit 2.8).

Figure 2.1: Regeneration Themes and Activity Categories	
Theme 1. Worklessness, skills and business development	
↵	Worklessness, skills and training (1.ST)
↵	Enterprise and business development (1.ENT)
Theme 2. Industrial and commercial property and infrastructure	
↵	Industrial and commercial property (2.ICP)
↵	Infrastructure (2.INF)
Theme 3. Homes, communities and the environment	
↵	Housing growth and improvement (3.HOUS)
↵	Community development (3.COMM)
↵	Environmental improvement (3.ENV)
↵	Neighbourhood renewal (3.NEIGH)

- 2.9 A key dimension of regeneration activity is that it has typically evolved into a series of discretionary funding programmes, operating in parallel to, though often seeking to influence and complement, the activities of ‘mainstream’ public service delivery. A good example is the role of the Working Neighbourhoods Fund and its relationship with, for example, delivery of mainstream Department for Work and Pensions services through Jobcentre Plus.
- 2.10 As part of the study we have sought to assemble information on the totality of regeneration activity and expenditure. Figure 2.2 sets out what we believe to be a reasonable first estimate of what could be described as ‘core’ regeneration programme activity, funded by DCLG, the Homes and Communities Agency, the Department for Business, Innovation and Skills and the European Regional Development Fund. These programmes are in turn delivered by DCLG, the Homes and Communities Agency and the Regional Development Agencies. No doubt this list will prompt debate about what else could be included, but there can be little doubt that it represents a reasonable first estimate of the **minimum** level of regeneration activity delivered in England currently.
- 2.11 Over the period 2009/10 and 2010/11 it is estimated that a total of £20bn will be spent on these ‘core’ regeneration programmes – roughly £10bn a year. Ideally we would have wished to construct an estimate of spending for 2008/09 as well, but this proved difficult given the creation of the Homes and Communities Agency December 2008.

How has regeneration funding been used?

- 2.12 The analysis presented in Figure 2.2, while interesting, does not directly tell us how regeneration funding has been used. To tackle that question we examined each of the programme funding lines in Figure 2.2 and drew on corporate plan, annual reports, evaluations and other programme-related research to make informed

estimates of the proportion of core regeneration expenditure incurred across the 46 regeneration Activity Types referred to above.

Figure 2.2: Estimated 'core' regeneration programmes delivered by DCLG, the Homes and Communities Agency and the Regional Development Agencies*		
Delivery body	Estimated expenditure	
	2009/10 (£m)	2010/11 (£m)
DCLG		
Working Neighbourhoods Fund (WNF)	508	508
Local Enterprise Growth Initiative (LEGI)	99	100
Coalfields Regeneration Trust (CRT)	18	18
New Deal for Communities (NDC)	179	65
Renewing Neighbourhoods (Neighbourhood Management Pathfinders and Groundwork)	18	21
Homes and Communities Agency		
National Affordable Housing Programme	3248	2480
National Affordable Housing Programme (Housing Pledge)	375	381
Property and regeneration	406	211
Growth funding	278	190
Thames Gateway	79	79
Community Infrastructure Fund	132	160
Places of Change	24	23
Social Housing Efficiency Programme	3	2
Gypsy and Traveller Site Grant	32	32
Decent Homes - Gap Funding	100	80
Housing Market Renewal	346	311
Homes and Communities Agency Academy	6	6
New Communities Fund	3	10
Other	9	9
Kickstart housing (Housing Stimulus Package)	320	80
Kickstart Housing (Housing Pledge)	252	252
Local Authority Build (grant) (Housing Stimulus Package)	15	35
Local Authority Build (grant and borrowing) (Housing Pledge)	36	204
Housing Environment (Housing Stimulus)	75	29
Public Land (Housing Pledge)	0	16
Arms Length Management Organisations	909	609
Housing Private Finance Initiative Credits	950	925
Housing Stimulus Local Authority Build (Borrowing)	15	35
Regional Development Agencies*		
Regional Development Agency single budget	2260	1762
Regional Development Agency management of European Regional Development Fund	494	467
TOTAL	11189	9100
* This includes some inward investment and trade development expenditure which falls outside our definition of 'core' regeneration programmes.		

2.13 Figure 2.3 shows how we have allocated programme expenditure to different activity categories. Overall almost one fifth has been assigned to worklessness, skills and development activities. Around 11 per cent has gone on Theme 2 activities with the remainder of almost 70 per cent on homes, communities and the environment with the largest share assigned to housing growth and improvement.

Figure 2.3: Estimate of annual core regeneration expenditure by activity (based on 2009/10 and 2010/11)		
Regeneration Activity (Theme, Activity Category, Activity Type)	£m p.a.	%
Theme 1. Worklessness, skills and business development	1894	18.8%
Activity Category 1.WST – Worklessness, skills and training, of which:	629	6.2%
Helping people to become work-ready (1.WST.A1)	134	1.3%
Helping people into work (including re-entrants) (1.WST.A2)	215	2.1%
Helping people to stay in work (1.WST.A3)	21	0.2%
Helping employees and businesses with skills development in the workplace (1.WST.A4)	259	2.6%
Activity Category 1.ENT - Enterprise and business development, of which:	1266	12.5%
General support for business growth and competitiveness (1.ENT.A1)	415	4.1%
Start-up assistance and promotion of spin-outs (1.ENT.A2)	197	1.9%
Promotion of business enterprise research and development (1.ENT.A3)	654	6.5%
Theme 2. Industrial and commercial property and infrastructure	1143	11.3%
Activity Category 2.ICP – Industrial and commercial property	761	7.5%
Industrial and commercial property development (2.ICP.A1)	761	7.5%
Activity Category 2.INF - Infrastructure, of which:	382	3.8%
New road building (2.INF.A1)	226	2.2%
Highway improvements (2.INF.A2)	48	0.5%
Traffic calming (2.INF.A3)	0	0.0%
Public transport improvements (2.INF.A4)	60	0.6%
Access to broadband (2.INF.A5)	49	0.5%
Theme 3. Homes, communities and the environment	7052	69.9%
Activity Category 3.HOUS - Housing growth and improvement, of which:	6479	64.2%
New build (3.HOUS.A1)	5296	52.5%
Improving existing stock (3.HOUS.A2)	1017	10.1%
Demolition and new build (3.HOUS.A3)	148	1.5%
Reducing homelessness (3.HOUS.A4)	19	0.2%
Activity Category 3.COMM - Community development, of which:	35	0.3%
Volunteering (3.COMM.A1)	4	0.0%
Investment in community organisations (3.COMM.A2)	11	0.1%
Formal participation (3.COMM.A3)	4	0.0%
Community facilities (3.COMM.A4)	17	0.2%
<i>Continued on following page</i>		

Figure 2.3: Estimate of annual core regeneration expenditure by activity (based on 2009/10 and 2010/11)

Regeneration Activity	£m p.a.	%
Activity Category 3.ENV - Environmental improvement, of which:	430	4.3%
Open space (3.ENV.A1)	103	1.0%
Community space (3.ENV.A2)	39	0.4%
Nature reserves (3.ENV.A3)	0	0.0%
Public realm (3.ENV.A4)	288	2.8%
Green routes (3.ENV.A5)	0	0.0%
Blue routes (3.ENV.A6)	0	0.0%
Water quality (3.ENV.A7)	0	0.0%
Air quality (3.ENV.A8)	0	0.0%
Activity Category 3.NEIGH – Neighbourhood renewal, of which:	109	1.1%
Crime reduction – neighbourhood wardens and community police (3.NEIGH.A1)	8	0.1%
Crime reduction – multi-agency partnership working (3.NEIGH.A2)	10	0.1%
Crime reduction – CCTV (3.NEIGH.A3)	1	0.0%
Health improvement – healthy living (3.NEIGH.A4)	11	0.1%
Health improvement – smoking cessation (3.NEIGH.A5)	1	0.0%
Health improvement – teenage pregnancy (3.NEIGH.A6)	1	0.0%
Health improvement – drug and alcohol treatment (3.NEIGH.A7)	1	0.0%
Health improvement – supported living (3.NEIGH.A8)	3	0.0%
Education – truancy (3.NEIGH.A9)	1	0.0%
Education – classroom assistants (3.NEIGH.A10)	13	0.1%
Education – raising aspiration mentors (3.NEIGH.A11)	25	0.2%
Education – family learning support (3.NEIGH.A12)	31	0.3%
Street and environmental cleanliness (3.NEIGH.A13)	7	0.1%
Total	10090	100.0%
NB Please note that due to rounding some figures may not sum exactly to the stated totals/sub-totals		

2.14 What Figure 2.3 demonstrates quite clearly is the predominance of the following Activity Categories in regeneration funding over the period 2009/10-2010/11:

- Housing growth and improvement, comprising new build and improvements to the existing stock accounts for an estimated 64 per cent of core regeneration spend.
- Enterprise and business development activity is estimated to account for around 13 per cent of regeneration expenditure.
- Industrial and commercial property development activity is estimated to account for over 7 per cent of regeneration expenditure.
- Worklessness, skills and training activity is estimated to account for just over 6 per cent of regeneration expenditure.

- 2.15 Together these Activity Categories account for over 90 per cent of estimated regeneration expenditure in 2009/10 and 2010/11. Other notable Activity Categories with more than £350m of estimated expenditure over the two year period include infrastructure and environmental improvements, the latter mostly linked to open space and public realm activity.
- 2.16 Had this analysis been undertaken 5-10 years ago, we suspect the emphasis would have been rather different. Then, when key programmes or funding streams within the National Strategy for Neighbourhood Renewal – such as New Deal for Communities and the former Neighbourhood Renewal Fund - were at their peak in terms of expenditure, we believe there would have been significantly greater core regeneration expenditure directed at neighbourhood renewal.
- 2.17 In recent times, and particularly as a result of the recent recession, there has been a refocusing of regeneration expenditure on housing supply (by stimulating the private sector housing market and providing more affordable housing), on tackling worklessness (through initiatives like the Working Neighbourhoods Fund) and on improving enterprise and business competitiveness.
- 2.18 Each of the three Themes and their associated Activity Categories is described in more detail in Part II of the report (Sections 4, 5, 6 and 7).

3. Issues in valuing the benefits of regeneration

Introduction

- 3.1 Having considered the scope of regeneration activity in Section 2, this section begins by discussing the measurement issues that arise when valuing the benefits of regeneration. It then considers the approaches that can be used to assign values.

Measurement issues

- 3.2 A number of measurement issues arise in seeking to value the benefits of regeneration. It is important to capture the diversity of regeneration benefits and that a number of different markets and types of beneficiary may be affected. The beneficiaries of regeneration activity can be considered according to different spatial scales and for different groups in society and it is important to be able to attribute impact and avoid double-counting. Some categories of benefit may develop faster than others and persist for different periods of time. Moreover, not all the benefits produced are additional and it is necessary to take account of deadweight, displacement and leakage.
- 3.3 Regeneration is about closing gaps. It is most concerned with delivering impacts on targeted regeneration areas (typically at the sub-district level) or particular groups in society (e.g. those without work) such that their relative disadvantage to the nation as a whole is reduced. Thus, any consideration of the 'national' value of regeneration needs to identify the value of the additional regeneration benefits for people and businesses in the target regeneration areas. It should be noted that the study does not consider wider matters such as the benefits to the UK as a whole, or the opportunity costs of regeneration activity as opposed to other interventions *per se*.

Regeneration process vs. regeneration product

- 3.4 The benefits of regeneration can arise as part of the **regeneration delivery process**. For example, a core objective of a regeneration initiative may be to enhance partnership working or 'bend' mainstream expenditure. Such **strategic added value**¹⁶ is an essential part of ensuring that relatively deprived areas continue to improve and that the need for government intervention is reduced. The following stand out as being some of the main mechanisms by which such benefits might arise:

¹⁶ BIS (2005) *England's Regional Development Agencies RDA Corporate Plans for 2005-2008 Tasking Framework*. London: Department for Business, Innovation and Skills. www.bis.gov.uk/files/file26126.pdf

- The ability of the partnership approach to enhance the overall resources available for regeneration by drawing in a proportion of funding from some or all of the partners, including the private sector.
- The opportunity to achieve economies of scale in clustering regeneration projects/programmes within a local area and thereby securing economies in project management, financial planning and control, recruitment, purchasing etc.
- Synergy effects whereby partners modify their own activities to bring them more into line with objectives of the partnership as a whole and provide supporting activities to enhance partnership achievements.
- Co-ordination effects that may enable the avoidance of duplication of activity, permit large scale indivisible projects to go ahead and allow partners to specialise in areas of expertise/projects in which they have comparative advantage.
- Externality effects whereby the integrated partnership approach leads to a further clustering of regeneration activities that achieve a critical mass, improve the image of the area and attract new activity both to itself and surrounding areas.

3.5 Much research has been undertaken to assess the importance of these factors in regeneration (Department of Land Economy, 2009).¹⁷ This report is concerned with valuing the regeneration product itself.

Defining the pathways

3.6 A key factor that has influenced our thinking is that valuation issues need to be considered alongside current thinking on how regeneration activity is evaluated. Thus, it is important to recognise the activities, outputs, outcomes, impacts and value associated with each type of regeneration activity as described in the Green Book¹⁸ and the 3R's Guidance produced by DCLG.¹⁹ For each regeneration activity it is desirable to consider the 'theory of change', i.e. the specific ways in which regeneration investment brings about change for the people or places concerned.

3.7 The conventional approach adopted has been to develop a 'logic chain' that considers inputs, activities, outputs, outcomes and impacts. More specifically:

- **Inputs:** the financial and other resources spent on regeneration activities.
- **Activities:** measures of what regeneration projects or programmes 'buy'

¹⁷ Dept of Land Economy (2009) *The Single Regeneration Budget: Final evaluation*. Cambridge: Department of Land Economy.

¹⁸ HM Treasury (2008) *The Green Book. Appraisal and Evaluation in Central Government*. Treasury Guidance. London: TSO. www.hm-treasury.gov.uk/d/green_book_complete.pdf

¹⁹ ODPM (2004) *Assessing the impact of spatial interventions. Regeneration, renewal and regional development. 'The 3Rs guidance'*. London: Office of the Deputy Prime Minister.

using their inputs, for example training places, businesses assisted, hectares of land reclaimed. Activity measures will vary across different Activity Types.

- **Outputs:** measures of the benefits that specific projects or programmes deliver for target beneficiaries (individuals and businesses) and areas. Examples include qualifications achieved by individuals, changes in the performance of targeted businesses, the tenure and quality standards of new dwellings. Output measures will vary across different Activity Types.
- **Outcomes:** measures of social, economic and environmental characteristics of areas or groups of people. Regeneration activity seeks to change these outcomes for the better. The extent to which outcomes can be valued is a key concern of this study.
- The **Impact:** is the outcome change which can be attributed to the intervention.

3.8 Figure 3.1 shows how these elements come together in a standard evaluation framework.

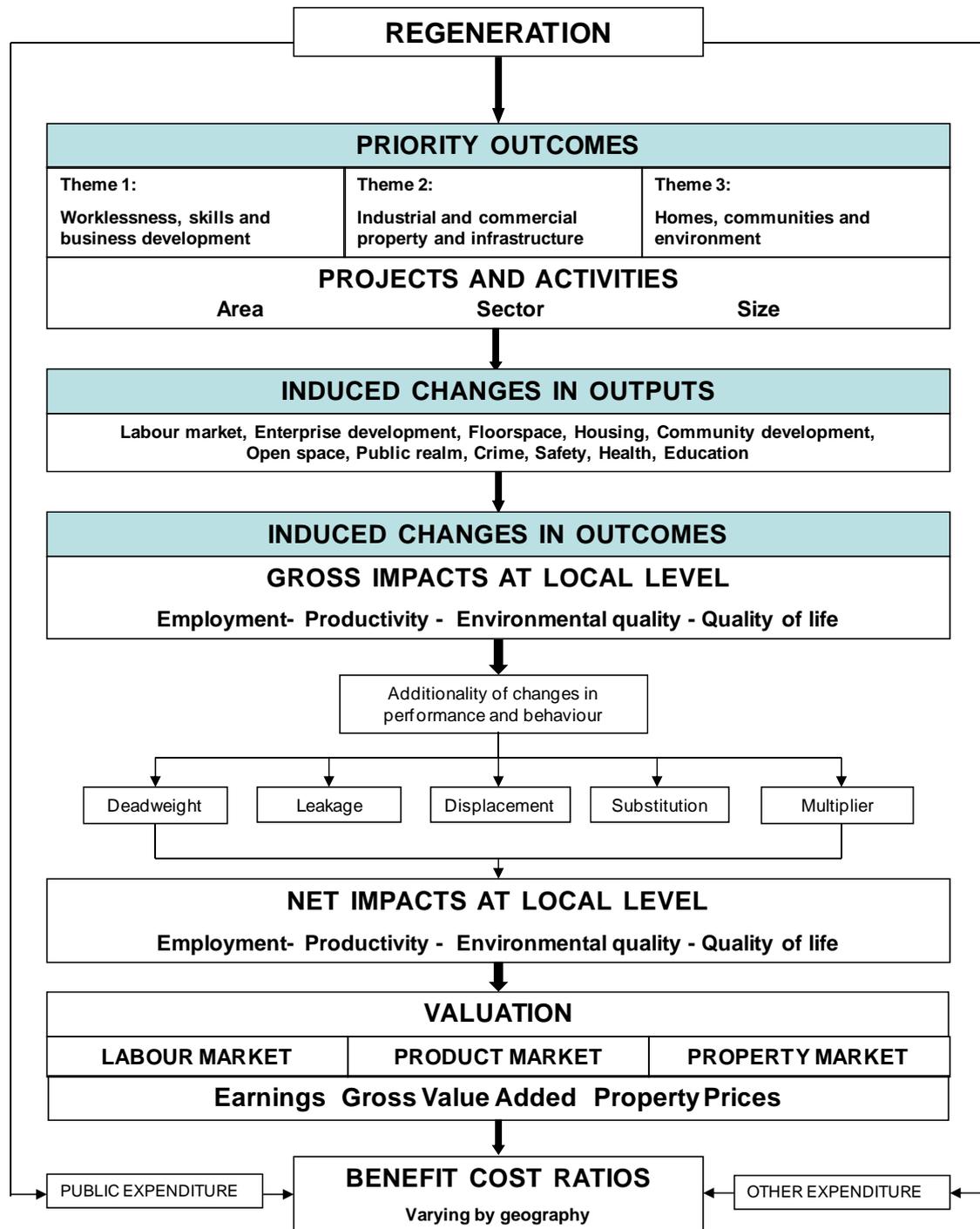
3.9 It should also be recognised that the logic chain described above enables the *direct* benefits that arise from regeneration to be assessed. It is possible that these direct effects may also have **indirect** effects elsewhere in society. The pathways and extent to which these indirect effects arise are often not well understood and may be difficult to quantify. Thus, by way of example, the provision of better work opportunities and associated higher incomes may improve health and reduce crime. It is important to value these indirect effects if the evidence is available to do this. If precise quantification is not possible it is still desirable to qualitatively identify the indirect benefits and the ways in which these are expected to be generated.

Who benefits: the boundaries of economic jurisdiction

3.10 A central element of all approaches to valuing the costs and benefits associated with policy measures is to identify who are the relevant parties affected. This is not necessarily a straightforward task. Regeneration activities can be designed to improve the physical and environmental quality of a specific place and in some cases the beneficiaries involved may be fairly readily identified because the people live in the place and there is a strong and direct relationship between the two. In other cases, however, this relationship is weaker and the beneficiary population may only benefit from any improvement in the quality of the place when they visit it, or pass through it, en route to elsewhere.

3.11 It is important to avoid double counting and this requires careful attribution of impact. Regeneration initiatives have also been targeted at a variety of different spatial scales spanning the region, sub-regional and, increasingly, the neighbourhood level and the number of potential beneficiaries varies accordingly.

Figure 3.1: The pathways associated with regeneration activity (CEA, 2010)



3.12 Related issues concern the boundaries associated with the impact of regeneration. This issue has received far too little attention, but assumes particular importance when it comes to the valuation of regeneration benefits. Even in the simple example where boundaries of impact are conceived according to geographic space, there are considerable differences between the benefit gradient associated with environmental enhancement and that of a new training initiative. A key issue is thus the need to identify the geographic boundaries of **economic jurisdiction**.

Additionality

- 3.13 As Figure 3.1 shows, central to the evaluation process is the importance of assessing how much the regeneration initiative has been able to change behaviour so that there are additional outputs and outcomes that would not otherwise have been generated in the absence of the regeneration. Estimating deadweight, then allowing for leakage, displacement, substitution and multiplier effects (where appropriate) is an essential part of the process whereby gross outputs and outcomes are translated into their net additional equivalents. **It is these net benefits that should be valued.** Once they have been valued they can then be considered alongside the public expenditure that has been incurred to create them and an overall return calculated in a way that has not hitherto been possible in evaluation work, i.e. a Benefit Cost Ratio.

Allowing for impacts on different groups in society: distributional impacts

- 3.14 Regeneration activity impacts on a diverse range of individuals across society with considerable variation by income, gender, ethnicity, age, geography and disability. Green Book guidance emphasises that the distributional effects of policy intervention should be identified explicitly and quantified as far as possible. The Green Book recommends that a *“rigorous analysis of how the costs and benefits (-) are spread across different socio-economic groups is recommended.”* (HM Treasury, Green Book Annex 5).
- 3.15 The research presented in this Report has sought to establish the value associated with a **unit** of regeneration benefit. As the Green Book recognises the **worth** of this benefit may be greater to some people relative to others. Those on lower incomes who tend to be disproportionately concentrated in the most deprived areas. In our research we have sought to establish the Benefit Cost Ratios associated with regeneration policy without making adjustments to account for any distributional effects. The Green Book presents possible adjusters based on family income and which reflect the perceived ‘worth’ of a unit of income by quintile. A unit of income is worth more to those on lower incomes than those on higher incomes and the benefit ratio can be adjusted to reflect using wage/income data.

Duration, durability and time

- 3.16 The impact of regeneration initiatives may often unfold over a considerable period of time and this has to be recognised in the valuation process. A further issue relates to the durability of the impacts. There are fairly well developed approaches to dealing with these factors and in particular how benefit streams should be discounted and which should thus be incorporated into the overall valuation framework (HM Treasury, 2003).

Valuation issues

- 3.17 Having established the key measurement issues, we then need to consider the approaches that can be used to assign values.

Real resource benefits vs. Exchequer savings

- 3.18 Where possible the focus of the valuation work has been on the real resource costs and benefits to society that arise as a result of the regeneration initiative. However, in some cases it is also appropriate to consider the impact of regeneration on bringing about savings in public expenditure (Exchequer savings). These issues are discussed as appropriate in Section 4 of this Report.

Market and non-market valuation

- 3.19 In some cases the benefits of regeneration activity are readily manifested in a market place and, unless the market is imperfect, a value can be assigned. In circumstances where actual prices cannot be charged, or where prices do not reflect the true scarcity value of a good, (HM Treasury, 2003) shadow pricing can be used. Thus, some of the benefits that arise from regeneration projects can be translated into monetary values because they are traded in markets that provide an indication of their worth. An obvious example would be the additional jobs that a regeneration scheme creates and unless the market is subject to serious distortion then information is available. Even when market valuations are believed to be somewhat distorted there is a substantial literature on how to deal with these issues.
- 3.20 In other cases no market valuation exists and a value has to be inferred through the application of shadow pricing techniques that are outlined in Volume II. In assigning values we have considered the major impacts of regeneration in land, property and labour markets, but there are obvious issues when it comes to valuing impacts that affect the environment, health and community development where surrogate markets may have to be used and a variety of non-market valuation techniques applied. Obvious examples here occur in relation to environmental benefits where it becomes necessary to use techniques such as stated preference or revealed preference methods.
- 3.21 Wherever possible we have sought to base the valuation on market information. However, in several areas, such as improvement of environmental quality, and land remediation, primary research using established analytical techniques such as stated preference and hedonic pricing mechanisms has been utilised to estimate financial values for the interventions. Whilst there has been significant progress in recent years in developing techniques with which to value some of the impacts provided by regeneration initiatives there is one major overarching factor that has inhibited progress. This is the cost associated in applying the techniques and thus obtaining

primary data. The surveys required to produce estimates of willingness to pay or accept, or other aspects associated with stated preference studies (e.g. contingent valuation and choice modelling), are resource intensive.

- 3.22 Even when revealed preference techniques like hedonic pricing are used they often require considerable research resource to ensure that the appropriate controls are put in place. It is usually relatively less costly to value regeneration impacts as they arise in, and through, the labour market simply because there is often more information available and some of the surveys required to indicate additionality, direction of travel and the probabilities of getting an enhanced labour market experience need not be that expensive.
- 3.23 It would thus be highly desirable to find more cost effective ways of valuing the benefits (and costs) of regeneration projects. And, although there are difficult problems to be overcome it is noticeable that in other areas of public expenditure some advances have been made even where there is a complex array of associated outcomes. For example it is common practice in appraisal of environmental impacts to use monetary valuation evidence from existing studies via a process termed 'value transfer' (or 'benefits' transfer). The Department for Environment, Food and Rural Affairs has developed guidelines for value transfer (eftec, 2010).²⁰

Using existing monitoring and evaluation data where possible

- 3.24 It is important in valuing the benefits of regeneration that use is made of existing evidence. There is an extensive academic literature and also body of research commissioned by Government Departments across the full range of mainstream service provision. There is also a large and growing amount of evaluation of the achievements of regeneration policies, programmes and projects and the findings from this work need to be examined carefully.
- 3.25 It is also important that the findings of the research be produced in a way that enables them to be incorporated into the evidence base that is informing regeneration policy and practice. One of the perceived limitations of much research in the regeneration area has been that it has not been possible to build an evidence base that brings together individual pieces of research so that the cumulative position improves. Recent research on the additionality associated with regeneration programme and projects showed how this might be achieved,²¹ but there is a need for such work to be maintained and co-ordinated across Departments on an ongoing basis.

²⁰ eftec (2010) *Valuing environmental impacts: Practical guidelines for the use of value transfer in policy and project appraisal*. [Non-Technical Summary] Submitted to Department for Environment, Food and Rural Affairs.

²¹ Cambridge Economic Associates (2009) *Research to improve the assessment of additionality*. London: Department for Business, Innovation and Skills.

- 3.26 Bringing the evidence together Part II of this Report describes how the benefits associated with regeneration have been valued. For each of the main activities of regeneration the approach has been to provide an overview of the type of regeneration activity, the logic chain that represents how regeneration inputs translate into impacts, how valuation can be approached, the preferred valuation approach and a derived central estimate of value.
- 3.27 The state of the existing evidence base means that the Benefit Cost Ratios are only illustrative of the approach at this stage. Clearly these central estimates are subject to variations that reflect a number of different factors. First there will be margins in error in the estimates that arise because of issues around data and measurement (e.g. the data may not be up to date or there may be few observations giving rising to large confidence intervals). Second, as shown in Part II two key pieces of information are used: the public sector cost of producing each additional regeneration output; and the value that should be assigned to this. There will inevitably be variations around any central estimate of unit costs that reflect the severity of the problems being tackled (e.g. more or less contaminated sites). There will also be variations in values according to people and place, reflecting the characteristics of the beneficiaries, their local economy and the quality of the outputs and outcomes produced.

Part II

Bringing the Evidence Together

4. Worklessness, skills and business development

Introduction

- 4.1 This section discusses the objectives, valuation issues and valuation evidence associated with regeneration **Theme 1: Worklessness, skills and business development**. The two Activity Categories within this theme are **worklessness, skills and training** and **enterprise and business development**.
- 4.2 For each of these Activity Categories we begin with a brief overview of the activity, set out the logic chains and their 'theory of change', summarise the valuation issues and options, present our preferred valuation approach and set out the valuation findings after applying the available evidence. This overview material is underpinned by a more detailed review of the valuation issues and options found in Volume II.

Worklessness, skills and training

Overview

- 4.3 A mainstay of welfare-to-work initiatives over the last 13 years, and a relatively well-researched area in terms of evaluation evidence, has been the Department for Work and Pensions' New Deal programmes, focusing on moving the long-term unemployed and economically inactive towards and into employment. Alongside these there is a National Minimum Wage and other measures to make work pay, both by easing the transition from non-employment into work and through in-work tax credits.
- 4.4 The New Deal policies have been targeted at particular population sub-groups including: the New Deal for Young People, New Deal for Lone Parents, New Deal 50 Plus and New Deal for the Disabled. Some of these policies have been mandatory and others have been voluntary, so raising issues about the different nature of entrants to these programmes. Voluntary schemes may tap into individuals who are eager to work. Evidence suggests that the motivation of an individual to participate in the labour market and enter employment is a key factor in any form of action to reduce worklessness (Hasluck and Green, 2007).²²
- 4.5 The New Deal policies outlined above have been focused on 'people' rather than on 'places' *per se*. However, there have also been initiatives focusing on particular

²² Hasluck C. and Green A. (2007) *What Works for Whom? A Review of Evidence and Meta-Analysis*, DWP Research Report 407. Leeds: Department for Work and Pensions.

places with high levels of worklessness – such as Employment Zones and Action Teams for Jobs. Like the New Deals, they are characterised by a **supply-side orientation** on the basis that deficiencies among the (potential) workforce are a key part of the worklessness problem. Indeed, individuals with no formal qualifications experience lower employment rates than those with low, intermediate and higher levels qualifications, and once in work are more likely to experience movement between employment and non-employment. While at one time learning and skills were ‘divorced’ from employment policy, since the publication of the Leitch Review²³ there has been a move towards more integration.

- 4.6 The New Deal programmes are now being replaced by the Flexible New Deal, with an emphasis on more flexible and individualised services in accordance with individuals’ needs and situations. There is also a shift towards delivery of employment services by private sector, third sector and local authority providers (Convery, 2009).²⁴ After all, the evidence base suggests that there are no ‘magic bullets’ and the diversity of worklessness is such that there is no ‘one size fits all’ approach (Green and Hasluck, 2009).²⁵
- 4.7 The Working Neighbourhoods Fund, created in December 2007, illustrates how tackling worklessness has moved to the forefront of regeneration. The Working Neighbourhoods Fund, which replaced Neighbourhood Renewal Funding, provides resources to 61 of the most deprived local authorities to tackle worklessness and low levels of skills and enterprise in their most deprived areas. Since 2008 the Department for Communities and Local Government (DCLG) and the Department for Work and Pensions have jointly provided £1.5bn of Working Neighbourhoods Fund funding which the recent Working Neighbourhoods Fund Scoping Study²⁶ found was being used on a wide range of supply-side and demand-side interventions. The Working Neighbourhoods Fund was recently (November 2009) topped up with additional resources targeted at enhancing the skills and employment prospects of families suffering from persistent unemployment.
- 4.8 Turning to workforce skills, Train to Gain was launched in 2006. This national programme seeks to engage small and medium sized enterprises in particular in workforce development in order to generate the productivity benefits that accrue from higher skills. The programme, which is now overseen by the Department for Business, Innovation and Skills, subsidises each participating firm’s training costs, with the objective of improving the return to the business from investment in training.

²³ Leith, S. (2006) *Prosperity for all in the global economy – world class skills. Leitch Review of Skills*. London: HM Treasury.

²⁴ Convery P. (2009) Welfare to Work – from special measures to 80 per cent employment. *Local Economy*, 24, pp.1-27.

²⁵ Green A.E. and Hasluck C. (2009) Action to reduce worklessness: what works? *Local Economy*, 24, pp.28-37.

²⁶ Dept of Land Economy (2009) *The Working Neighbourhoods Fund Scoping Study. Worklessness and how WNF is being used to tackle it*. London: DCLG.

Worklessness, skills and training logic chains

- 4.9 From an individual's perspective, there are four Activity Types which essentially describe movement or progression within four different employment states. The first involves reaching out to people not currently in the labour market with information, guidance and advice, and motivating them and giving them the confidence to take the first steps towards work. This logic chain has activities relating to employability support and may lead to some basic skills or other employability qualification by the beneficiary. This contributes to an overall improvement in basic skills and employability.
- 4.10 The second logic chain – helping people into (or back into) work – represents the next stage on the 'customer journey'. Here the activities are more focused on job-related training, job brokerage activity and specific help to take up a job (e.g. help with travel, clothes, equipment and in-work tax credits). Outputs include vocational and academic qualifications and, ideally, entry into employment with the consequent income benefits associated with working. This logic chain has the potential to culminate in reductions in worklessness, improved earnings and thus increased Gross Value Added, as well as overall improvements in the skills and qualifications of the workforce.
- 4.11 Over recent years there has been an increasing focus on ensuring that those finding work are assisted to retain their jobs. Typically this involves in-work support and advice from Personal Advisors with the objective of keeping them in work for sustained periods of time (ideally at least six months). The primary outcome of this activity is in reducing movement between employment and unemployment.
- 4.12 The final activity type targets both those in employment and their employers to improve workforce skills. Through initiatives such as Train to Gain, employers and employees are encouraged to invest in skills development, with potential outcomes for individuals of higher wages and improved employability and for the business in terms of productivity.

How valuation can be approached in this Activity Category

- 4.13 Volume II notes that a number of studies have considered how the benefits of a range of initiatives designed to **tackle worklessness** might be assigned a monetary value. One approach – a top-down approach - is to model the impact of regeneration measures on outcome measures such as worklessness and then seek to assign value. This would first require evidence on worklessness in deprived areas before and after intervention and a detailed model that would allow a counterfactual to be established. At the present time this work has not been undertaken.

- 4.14 The alternative, bottom-up, approach is to take output data that identifies the number of net additional beneficiaries who believe that the intervention enabled them to progress from one position in the labour market to another (e.g. from being out of work into a job) and then value this. The different positions can then be valued using existing labour market information that is available from published sources like the Office for National Statistics Annual Survey of Hours and Earnings (providing information on earnings) and the Labour Force Survey/Annual Population Survey (providing information on economic position, sector, occupation, hours of work, qualifications, pay, job-related training, etc, and evidence on Gross Value Added per employee). The approach is thus a combination of beneficiary survey and use of published sources, but is based on applying the approach to people participating in a regeneration programme or project.
- 4.15 Volume II also discusses the possibility of estimating the savings to Exchequer costs that can be captured by moving people off benefits and into work (see Freud, 2007²⁷). These include Exchequer savings resulting from moving people off benefits into work (including the increased tax revenues), as well as Exchequer cost savings derived from indirect effects of tackling worklessness on crime and health which have been used to 'shadow' the social benefits of progression into employment. Care is needed in presenting and using these benefits, since not all represent real resource benefits to the economy, but they may be a legitimate consideration for those appraising and evaluating the performance of regeneration interventions.
- 4.16 In considering how the benefits of **skills and training activity** might be valued, there is an extensive literature on 'rates of return' to different qualifications, drawing on human capital theory. The idea here is that in a reasonably competitive labour market, the benefits of skills development (as measured by qualifications) can be estimated on the basis of additional earnings once the skill has been obtained.
- 4.17 In relation to both of the Activity Types above, an alternative to the market-based approach above is the use of contingent valuation techniques. Volume II notes that these have been thought to be more effective in valuing 'obtaining employment/better employment' than in the case of 'increased life skills/confidence/gaining a qualification' since it is easier for interviewees to grasp the former. However, the application of the contingent valuation technique in a labour market context usually requires face-to-face interviewing and is thus relatively expensive.

Preferred valuation approach

- 4.18 Taking into account the issues and potential valuation approaches summarised above, our preferred approach to valuation of benefits in this Activity Category is in two key steps. The first step involves moving **from regeneration expenditure to**

²⁷ Freud D. (2007) *Reducing dependency, increasing opportunity: options for the future of welfare to work*. London: Department for Work and Pensions.

net additional outputs by applying evidence on the unit cost for helping people into work and for skills development in the workplace. The second step then involves **applying unit values to the net additional outputs**.

- 4.19 There is a range of good quality evaluation evidence on the unit cost per net additional **positive outcome into employment** taking into account labour market substitution effects. Those appraising or evaluating interventions should already have such data, or be able to estimate it without resort to unit cost ready reckoners. For valuation purposes, 1 net additional positive outcome into employment is equivalent to a net increase of 1 job. The Department for Work and Pensions have argued that where regeneration activity simply acts to move people into a job, and where the capital for that job already exists, then the value of net additional positive outcomes into employment is less than Gross Value Added and equivalent to the employees earnings plus social benefits, such as reductions in health and crime costs.
- 4.20 For the **workforce skills uplift**, there is evaluation evidence on the unit cost of skills development activity and on the net additional uplift in individual skills as a result of training (proxied by NVQ Level) for workforce development initiatives such as Train to Gain. In valuing the skills uplift, we rely heavily on evidence from the Centre for Economics in Education at the London School of Economics which suggests earnings enhancement that accrues from progression to NVQ Level 2; and from NVQ Level 2 to 3. This can then be translated from earnings into a Gross Value Added effect.
- 4.21 Other considerations are how quickly these benefits build up and how long they last for. With these assumptions a stream of benefits can be estimated and then discounted to a Present Value. Comparison of the Present Value of benefits with the annual regeneration investment made enables a Benefit Cost Ratio to be derived. Figure 4.1 summarises the overall approach.

Figure 4.1: Valuation approach and data sources – worklessness, skills and training

Activity Types	What principal outputs and outcomes will be valued?	Valuation approach	What data sources are being used to derive regeneration outputs and outcomes?	What data sources are being used to derive values?
Tackling worklessness (Helping people to become work-ready and Helping people into work (including re-entrants))	Net individuals into work	Use of market based data through revealed preference techniques	Primary data from existing evaluations showing: - Unit cost which enables the number of beneficiaries to be derived - Net positive outcomes into employment	Data on average earnings (entrants into work) from: - the Annual Survey of Hours and Earnings - the Labour Force Survey/Annual Population Survey
Helping employees and businesses with skills development in the workplace	Net improvements in qualification by NVQ Level	Use of market based data through revealed preference techniques	Primary data from existing evaluations showing: - Unit cost which enables the number of beneficiaries to be derived - Net improvements in qualifications	Data on earnings improvement related to qualifications: - Centre for Economics in Education (LSE)

Note: The Activity Type Helping people to stay in work is not included above because there was insufficient evidence on both unit costs and values

Applying the evidence

Tackling worklessness

- 4.22 Figure 4.2 presents the evidence on unit cost for this activity type, i.e. the cost per net additional positive outcome into employment. This has drawn on evidence presented in the 2007 National Audit Office Report.²⁸ Based on the observations available, the mean unit cost is just over £13,300 and the range around the mean at the 95% Confidence Interval is from £7,300 to £19,300. Factors influencing unit costs include the work-readiness of the individuals being targeted, and the nature and intensity of support required to move them into sustainable employment.
- 4.23 Figure 4.2 also applies this unit cost ranges to the £349m of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (26,200) is used in the valuation exercise presented below.

²⁸ National Audit Office (2007) *Helping people from workless households into work*. London: TSO. www.nao.org.uk/publications/0607/helping_the_workless_into_work.aspx

Figure 4.2: Tackling worklessness - variation in unit costs and potential net additional outputs

Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional positive outcome into employment	£7,353	£13,320	£19,287
Net additional positive outcomes into employment from annual public sector expenditure of £349m on this activity	47,400	26,200	18,000

- 4.24 In valuing these outputs we have focused on the direct as well as two indirect benefits. Valuing the direct benefits requires evidence on earnings generated by a beneficiary who has moved from worklessness into employment. This draws on Department for Work and Pensions evidence for earnings of an average Jobseeker's Allowance claimant moving into work of £11,779 per annum. Regarding the persistence of these benefits, the limited evaluation evidence on this issue suggests that the benefits may last for around one year.
- 4.25 The procedure that we have adopted to estimate the *indirect* benefits of reducing worklessness is based on research undertaken by the Department for Work and Pensions.²⁹ The size of possible indirect effects has been estimated as they relate to reductions in ill health and property related crime.
- 4.26 In relation to health, the Department for Work and Pensions work estimates that getting a person into work will reduce annual NHS costs by £508 (in 2008 prices). A higher cost-saving emerges for those with disabilities (£1016). In applying the evidence we have taken a cautious approach by applying the lower figure. Inflating this to 2009 prices values the annual benefit per net positive outcome into employment at £513.
- 4.27 The recommended approach for valuing the impact of reduced worklessness on crime reduction is more complicated. The first step is to estimate the percentage increase in income achieved by beneficiaries supported into work. This is the amount of income gained from moving off benefits and into work as a proportion of initial benefit receipts. Evidence provided to research team by DCLG suggests average Jobseeker's Allowance claimant beneficiaries have pre-intervention benefits averaging £5,311 and gross earnings averaging £11,779 once in work, representing a percentage increase in income achieved of 122 per cent.
- 4.28 The second step recommended by the Department for Work and Pensions research is to multiply this figure by 0.6 in order to provide an estimate of the percentage decrease in the probability of committing a crime by an individual finding work.

²⁹ Fujiwara, D. (2010) *The Department for Work and Pensions Social Cost-Benefit Analysis Framework: Methodologies for estimating and incorporating the wider economic and social impacts of work in cost-benefit analyses of employment programmes*. London: Department for Work and Pensions.

- 4.29 The final step is to multiply this percentage decrease by the cost of property crime. The Department for Work and Pensions draws on Home Office research and data (inflated to 2009 prices) to estimate the cost of crime associated with employment programme participants (Brand and Price, 2000). For males aged 17-24 on employment programmes, this is estimated at £5,170, while for men aged 25+ the cost is lower (£2,610). For female employment programme participants aged 17-24, the cost of property crime is estimated at £1,250 and again the figure is lower at £444 for those aged 25+. In applying this evidence we have assumed that the beneficiary population is split equally between males and females and that 33 per cent are aged 17-24 and 67 per cent aged 25+. Clearly these proportions will differ according to the beneficiary characteristics of the programme in question.
- 4.30 Figure 4.3 shows how the evidence, based on a mean unit cost, has been applied to tackling worklessness activities. It estimates the real resource benefits derived from gross earnings for those progressing into employment as well as allowing for the indirect benefits of employment to society that arise through improved health and reduced property crime.

Figure 4.3: Deriving the value of tackling worklessness activity			
	Direct benefits	Indirect benefits	
	Real resource benefit through earnings	Shadow prices: health	Shadow prices: property crime
a) Expenditure	£0.349 billion		
b) Public sector cost per net additional positive outcome into employment	£13,320		
c) Net additional positive outcomes into employment (a/b)	26,200		
d) Value per net additional positive outcome into employment per annum	£11,779*	£513**	£1,522***
e) Value of net additional benefits p.a. (c x d)	£0.309 billion	£0.013 billion	£0.04 billion
f) Present Value of benefits	£0.309 billion	£0.013 billion	£0.04 billion
g) Overall PV of benefits	£0.362 billion		
h) Benefit Cost Ratio (g/a)	1.04		
i) BCR based on more cautious valuation assumption	N/A – estimates already considered to be at low end of possible range		
* Department for Work and Pensions estimate of gross earnings of average Jobseeker's Allowance claimant into work			
** applying Department for Work and Pensions guidance on valuing the impact of progression into employment on health for non-Employment and Support Allowance programme participants, inflated to 2009 prices			
*** applying Department for Work and Pensions guidance on valuing the impact of progression into employment on crime, assuming 50/50 male/female and 33% aged 17-24 and 67% aged 25+			

4.31 The approach described above, which looks at the real resource benefits associated with tackling worklessness, is the preferred one. However, as part of the study we were asked to demonstrate an alternative approach which draws on evidence on the impact of tackling worklessness on savings to the taxpayer in reduced benefits and increased tax revenues. The Department for Work and Pensions estimates that the net fiscal benefit to the taxpayer from moving someone from worklessness into work is £6,895 on average per annum, and Annex B shows how this value could be applied if one wanted to understand the Exchequer benefits of tackling worklessness.

Skills and training

4.32 Figure 4.4 presents the evidence on unit cost for this activity type, i.e. the cost per net skills assist leading to an NVQ Level 2 or higher qualification. This has drawn on a wide range of evaluation evidence (see Volume 2 for references). Based on the observations available, the mean unit cost is £8,850 and the range around the mean at the 95% Confidence Interval is from £5,205 to £12,500. Factors influencing unit costs include the type of training course being provided, the NVQ Level of the training and the training delivery method.

4.33 Figure 4.4 also applies this unit cost ranges to the £259m of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (29,200) is used in the valuation exercise presented below.

Figure 4.4: Skills and training - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net skills assist leading to NVQ Level 2 or higher	£5,205	£8,851	£12,497
Net skills assists leading to NVQ Level 2 or higher from annual public sector expenditure of £259m on this activity	49,700	29,200	20,700

4.34 Figure 4.5 below shows how the evidence has been applied to the skills and training activity.

Figure 4.5: Deriving the value of skills and training activity	
a) Expenditure	£0.259 billion
b) Public sector cost per net skills assist leading to NVQ Level 2 or higher	£8,851
c) Net additional skills assists leading to NVQ Level 2 or higher (a/b)	29,200
d) Value per net additional skills progression	£6,740 to Level 2; £2,240 from Level 2 to Level 3
e) Value of net additional benefits p.a. (c x d)	£0.171 billion
f) Present Value of benefits (based on build up of 1 year and duration of 3 years)	£0.565 billion
g) Benefit Cost Ratio (f/a)	2.2
h) BCR based on sensitivity exercise (change in duration from 3 years to 2 years)	1.6

4.35 The unit cost associated with skills development in the workplace will vary depending on the nature of the qualifications being pursued and the complexity and duration of the training provision. Regrettably the evaluation evidence appears to lack the granularity required to distinguish between the unit costs of supporting someone with no qualification to get to NVQ Level 2 versus enabling someone already qualified to NVQ Level 2 to get to NVQ Level 3. For the purposes of the analysis above, we have drawn upon the available evaluation evidence on cost per net additional skills assist and inferred from this that it is associated with progression of the kinds described above.

4.36 As noted above, the valuation step involves applying evidence on earnings uplift to progressions to NVQ Level 2 for those with no qualifications at the start, and for those moving from Level 2 to Level 3. We have drawn on evidence from the Train to Gain evaluation which suggests that, for this programme at least, 80 per cent of activity is directed at upskilling to Level 2 and 20 per cent concerned with moving beneficiaries from Level 2 to Level 3.

- 4.37 Deriving the value per net additional skills progression shown in Figure 4.5 involves a number of separate steps as follows:
- starting with a base median gross weekly earnings for all UK employees from the 2009 Annual Survey of Hours and Earnings of £20,644
 - multiplying the result by 0.15 (15%) for progressions to Level 2 and 0.05 (5%) for progressions from Level 2 to Level 3, drawing on evidence from the Institute for Fiscal Studies³⁰ which has also been applied by the Department for Business, Innovation and Skills in its evaluation guidance to Regional Development Agencies³¹
 - uplifting wage effects by 1.21 to include non-wage labour costs (such as national insurance and pensions)
 - multiplying the resulting employment cost effect by a ratio of Gross Value Added to employment cost of 1.8 to generate an estimate of the enhanced Gross Value Added attributable to skills progressions.
- 4.38 When this was applied to the two types of skills progressions (no qualification to Level 2 and Level 2 to Level 3) it generates an estimated value of net additional benefits of £0.171bn per annum.
- 4.39 Evidence from Regional Development Agency impact evaluations suggests benefits build up over one year and then persist for three years. The Present Value of the stream of benefits over this period, discounted using HM Treasury's discount/Social Time Preference Rate of 3.5 per cent, is estimated at £0.565bn. Dividing this by the estimated annual investment results in a Benefit Cost Ratio of 2.2.
- 4.40 Clearly this estimate has the potential to vary significantly due to a number of different factors and in undertaking the research we were concerned to ensure that there was sufficient sensitivity applied to key parameters associated with durability and quality of regeneration benefits. In this case, it is often unclear how long the benefits will last and a sensitivity exercise was undertaken which reduced the duration of benefits from three years to two years. This more cautious assumption had the effect of reducing the Benefit Cost Ratio to 1.6.
- 4.41 Basic wage levels themselves will vary across the country due to variations in productivity. The 2009 Annual Survey of Hours and Earnings data for full-time employees suggests significant regional variation with wages ranging from the South East (£566.80 per week) to the North East (£478.80 per week), a spread of 8 per cent if we exclude London.

³⁰ Blundell, R., Dearden, L., Meghir, C. and Sianesi, B. (1999) Human capital investment: the returns to education and training to the individual, the firm and the economy. *Fiscal Studies*, 20, pp.1-23.

³¹ BIS. (2009) *RDA Evaluation: Practical advice to RDAs on implementing the Impact Evaluation Framework*. London: Department for Business, Innovation and Skills.

- 4.42 Differences in median pay will also vary according to the composition of the sample in terms of its occupations and skills levels. Thus, if we look at the UK as a whole, the 2009 Annual Survey of Hours and Earnings data shows that Managers and Senior Officials had median gross weekly wages that were 45 per cent higher than the UK median of £489 per week, while the lowest paid occupation, in Sales and Customer Service, had a median gross weekly wage of 60 per cent of the UK median. Wages also tend to vary by gender.
- 4.43 Where there is survey information on the location, occupation and gender of the beneficiaries there is therefore considerable scope to refine the analysis. Clearly there is also scope for primary survey work to establish intervention-specific performance in terms of the earnings uplift. The assumption above, from the Institute for Fiscal Studies, indicates a relationship between earnings and skills, but does not prove causation. As we note at the end of this section, there remains scope for significant further work on attribution and deriving a deeper evidence base on the levels of uplift generated.

Enterprise and business development

Overview

- 4.44 A significant number of regeneration initiatives have been designed to improve the economic well-being of areas that have experienced a dramatic decline in their economic fortunes in the post war period. Economic decline on the back of substantial economic restructuring has probably been most pronounced in the older urban cores of the United Kingdom, but there are also many examples in remote rural areas. The underlying challenge has been to “*bring about economic, physical and social renewal against a backdrop where so much of their existing stock of floorspace, human and physical capital is committed to the production of goods and services that either no longer exist or which are now made elsewhere*” (Dept of Land Economy, 2009, p.142³²).
- 4.45 A number of enterprise and business development initiatives have been undertaken. These include provision of access to capital/finance, land/premises, business advice, innovation support and the encouragement of collaboration/networking. Support has been given to indigenous business development as well as new start-up activity and in many areas there has been considerable emphasis on supporting innovation in an effort to increase economic diversity and encourage higher value added activity.

³² Dept Land Economy (2009) *The Single Regeneration Budget: Final Evaluation*. Cambridge: Department of Land Economy.

- 4.46 During the 1980s there was an emphasis on encouraging new business development in an area through the use of land and property initiatives as in Enterprise Zones.³³ Throughout, the Department of Trade and Industry gave assistance to companies through Regional Selective Assistance. There was also business support for small and medium sized enterprises through the Training and Enterprise Councils.
- 4.47 With the advent of City Challenge the emphasis shifted to the use of area based initiatives. Although the emphasis was on more 'holistic' regeneration much attention was given to developing activities that were targeted on encouraging the new formation of firms and assisting existing businesses to grow. This momentum was maintained with the advent of the Single Regeneration Budget in 1994.
- 4.48 The Single Regeneration Budget Challenge Fund approach to local area regeneration contained a number of innovative features, but a central component was the increased involvement of the private sector in the process of local area regeneration. The breadth and depth of business approaches to local area regeneration was enhanced.
- 4.49 One substantial change was the creation of the Regional Development Agencies. Although they began operations in 1998 they were launched formally in the eight English regions on 1 April 1999 with the ninth in London, established on the 3 July 2000 following the establishment of the Greater London Authority. The Regional Development Agencies were given the statutory requirements of furthering economic development and regeneration, promoting business efficiency, investment and competitiveness, promoting employment; enhancing development and the application of skill to employment; and contributing to sustainable development at the regional level. Following the 2000 Spending Review the Regional Development Agencies could roll their various programmes of regeneration, including the Single Regeneration Budget, into a Single Programme that was to be adopted from 2002/03. Between 2003 and 2010, the Regional Development Agencies were tasked with further responsibilities relating to business development and new firm creation including responsibility for Business Link. The position will change shortly as the Regional Development Agencies are replaced by Local Economic Partnerships.

Enterprise and business development logic chains

- 4.50 The definition of enterprise and business development regeneration activity embraces three separate logic chains. Two of these relate to support directed at existing individual businesses while the third relates to the creation of new firms. The types of activity can be categorised to some extent and related to the aspect of business behaviour which is being targeted. The first logic chain is focused on

³³ Tyler, P. (1993) Enterprise Zones: the British experience. *International Economic Insights*, 4(3), pp.42-43.
PA Cambridge Economic Consultants in association with Richard Ellis and Gillespies (1995) *Final evaluation of Enterprise Zones*. London: Department of the Environment.

bringing about enhanced business growth and competitiveness to existing businesses, primarily through changes to the internal operation of the firm, including management capability, enhanced marketing and sales, and efficiency improvements through, for example, improving the time to bring new products to market, better team working and stronger supply chain relationships.

- 4.51 Encouragement for greater innovation in existing firms is specifically dealt with under its own logic chain because of the importance of engagement with universities and other parts of the UK knowledge base and the role that this can play in bringing new products to market and in improving productivity. Such activity is often targeted at particular sectors, or at groups of companies in a particular locality with the objective of supporting cluster development.
- 4.52 Finally, support for start-ups needs to be treated separately, because it is focused (primarily, though not exclusively) on individuals who are seeking to set up their own business. Advisory support and, in some cases, grant funding activity can help the business through its formative business planning stages and securing the necessary loan or other finance needed to begin trading. Increasingly there is a focus on high-growth start-up activity and thus issues of targeting are to the fore. Within deprived areas, initiatives have produced valuable support to encourage new firm formation with the explicit objective of increasing employment opportunities for those in deprived areas. The survival of new start-ups is of crucial importance and thus a key output measure. Ultimately the longer term outcomes from this form of business support are the overall growth in the business base, Gross Value Added and employment.

How valuation can be approached in this Activity Category

- 4.53 As the discussion above clearly demonstrates, this Activity Category readily lends itself to valuation using market based data based on the revealed performance of the businesses supported. Surprisingly, as Volume II discusses in more detail, valuation in this Activity Category has been largely unexplored territory until quite recently. However, the recent Regional Development Agency Impact Evaluation Report³⁴ took the important step of valuing the net additional employment effects of Regional Development Agency interventions by applying Gross Value Added/employee ratios derived from established statistical sources.

³⁴ BERR (2009) *Impact of RDA Spending – National Report*. London: Department for Business, Enterprise and Regulatory Reform.

- 4.54 Recent guidance from the Department for Business, Innovation and Skills (commonly referred to as IEF+) ³⁵ reflects the need to develop enterprise and business development valuation approaches further, including generating direct estimates of Gross Value Added effects related to growth or productivity improvement of beneficiary firms through primary survey work.
- 4.55 It is hoped that future evaluation work will generate an array of useful data on the direct Gross Value Added effects of different types of intervention. For the moment, however, the evidence base remains weak and it remains necessary to use net additional employment effects as the basis for valuation.

Preferred valuation approach

- 4.56 As with worklessness, skills and training, our preferred approach to valuation in this Activity Category is in two key steps. The first step involves moving **from regeneration expenditure to net additional outputs** by applying evidence on the cost per net additional full-time equivalent at the local level. The second step then involves **applying unit values (Gross Value Added/employee) to the net additional jobs**.
- 4.57 Figure 4.6 summarises the valuation approach and key data sources for the enterprise and business competitiveness Activity Category.

Figure 4.6: Valuation approach and data sources – enterprise and business development				
Activity Types	What principal outputs and outcomes will be valued?	Valuation approach	What data sources are being used to derive regeneration outputs and outcomes?	What data sources are being used to derive values?
General support for business growth and competitiveness	Net employment creation	Use of market based data through revealed preference techniques	Primary data from existing evaluations showing net additional full-time equivalent jobs created/safeguarded	Gross Value Added per employee data from Annual Business Inquiry
Start-up assistance and promotion of spin-outs	“	“	“	“
Promotion of business enterprise research and development	“	“	“	“

- 4.58 Volume II references the large body of evaluation evidence relating to enterprise and business development initiatives and the approach has been to draw extensively on this material where possible. The starting point has been to take regeneration

³⁵ BIS (2009) *RDA Evaluation: Practical Guidance on Implementing the Impact Evaluation Framework*. London: Department for Business, Innovation and Skills.
www.eeda.org.uk/files/Practical_Guidance_on_Implementing_the_Impact_Evaluation_Framework.pdf

investment estimates and apply unit cost data, typically relating to cost per net additional job (full-time equivalent).

- 4.59 Having derived estimates of the volume of net additional jobs, these have been translated into values by applying market data relating to Gross Value Added per employee. This data, drawn from the Annual Business Inquiry, can be cross-tabulated by sector and by region and sub-region, and thus has the benefit of being customised to reflect the characteristics of employment being generated.
- 4.60 As with other Activity Categories, assumptions also need to be made relating to the speed at which benefits build up and how long they last for in order to derive an appropriate stream of benefits and thus a Present Value.

Applying the evidence

General support for business development

- 4.61 Figure 4.7 presents the evidence on unit cost for this activity type, i.e. the cost per net additional job at the sub-regional level. This has drawn on a wide range of evaluation evidence (see Volume 2 for references). Based on the observations available, the mean unit cost is just over £13,300 and the range around the mean at the 95% Confidence Interval is from £6,390 to £20,230. The range on unit cost is highly dependent on the nature of the support being offered. This ranges from limited advice on marketing or website development through intensive management consultancy activity to capital investment in plant and equipment. The severity of the market failure will also dictate how much investment the private sector is able to make, and thus the scale of public sector investment required.
- 4.62 Figure 4.7 also applies this unit cost ranges to the £415m of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (31,100) is used in the valuation exercise presented below.

Figure 4.7: General business support - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional job	£6,392	£13,309	£20,226
Net additional jobs from annual public sector expenditure of £415m on this activity	64,900	31,100	20,500

4.63 Figure 4.8 shows how the evidence has been applied to general business support activity.

Figure 4.8: Deriving the value of general business support activity	
a) Expenditure	£0.415 billion
b) Public sector cost per net additional job	£13,309
c) Net additional jobs (a/b)	31,100
d) Value per net additional job	£35,000
e) Value of net additional benefits p.a. (c x d)	£1.09 billion
f) Present Value of benefits (based on build up of 1 year and duration of 3 years)	£3.60 billion
g) Benefit Cost Ratio (f/a)	8.7
h) BCR based on sensitivity exercise (lower Gross Value Added per job (£33,000) and benefit duration (2 years rather than 3 years))	6.0
NB It was not possible to split between jobs created and jobs safeguarded	

4.64 The value applied to each net additional job is Gross Value Added per employee and this is a critical valuation assumption in Figure 4.8. This can be derived in a number of ways using data published by the Office for National Statistics. One approach is to take Gross Value Added data published in the Regional Accounts and divide it by employment from published Annual Population Survey results. This has the benefit of allowing a reasonably fine-grained analysis in **spatial** terms (down to sub-regional NUTS III level). An alternative is to use the approximate Gross Value Added at basic prices from the Annual Business Inquiry and divide by the average employment during the year. This enables a very fine-grained **sectoral** analysis.

4.65 Average Gross Value Added/employee in England is currently around £45,000 but there is some significant geographical variation which in turn reflects the sectoral composition of regional and local economies. London, with Gross Value Added/employee of over £70,000 due to the financial services sector, tends to skew the average and it is our view that for the purposes of valuing benefits in regeneration areas a lower central estimate should be applied which removes this distortion. Using Regional Accounts and Annual Population Survey data, the average for England excluding London is around £39,000. In the North East, for example, the average Gross Value Added/employee in 2007 was around £34,000, in Yorkshire and the Humber it was over £35,000 and in the East and West Midlands it was over £36,000.

4.66 For the purposes of the analysis above we have assumed that regeneration areas will have an average Gross Value Added/employee similar to most areas in the North. The range in Gross Value Added per employee across the North East, North West, Yorkshire and the Humber, East Midlands and West Midlands is £34,000 to £37,000. Weighting these regional Gross Value Added/employee figures by regional expenditure by the Regional Development Agencies and through the Homes and

Communities Agency's Property and Regeneration programme gives a weighted average Gross Value Added/employee of £35,000 to £36,000.

- 4.67 Along with the Gross Value Added/employee assumption, the speed at which benefits build up and the duration of benefits are the other two critical assumptions that enable the Present Value of benefits to be estimated. The evidence on duration of benefits is disappointingly thin, but the evaluation material that exists on this topic suggests that the benefits of these interventions may build up over one year and last for around three years.
- 4.68 Based on a Gross Value Added/employee of £35,000 and benefits duration of three years, the calculation displayed in Figure 4.8 generates a Benefit Cost Ratio of 8.7. A sensitivity exercise was undertaken which reduced the duration of benefits from three years to two years and which reduced the Gross Value Added/employee from £35,000 to £33,000. These more cautious assumptions result in a lower Benefit Cost Ratio of 6.0.
- 4.69 Clearly there is considerable scope to refine the ratio by geography and sector as well as derive bottom-up, firm-specific estimates from primary survey work using questionnaires such as those recommended in the IEF+ guidance referred to above.

Start-up assistance and promotion of spin-outs

- 4.70 Figure 4.9 presents the evidence on unit cost for this activity type, which once again is the cost per net additional job at the sub-regional level. As with general business support, this has drawn on a wide range of evaluation evidence (see Volume II for references). Based on the observations available, the mean unit cost is almost £10,700, with a sizeable range around the mean at the 95% Confidence Interval of £2,290 to just over £19,000. In some respects the factors influencing this considerable variation in unit costs are similar to those associated with tackling worklessness. They are very much dependent on the start-up readiness of the applicant and their individual skills as much as the specific requirements of the business. For those engaged in higher value added spin-out activity, the unit cost will be heavily influenced by the complexity of the business plan and the scale of the investment required to get the business up and running.
- 4.71 Figure 4.9 also applies this unit cost ranges to the £197m of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (18,400) is used in the valuation exercise presented below.

Figure 4.9: Start-ups and spin-outs - variation in unit costs and potential net additional outputs

Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional job	£2,290	£10,661	£19,032
Net additional jobs from annual public sector spend of £197m on this activity	85,700	18,400	10,300

4.72 Figure 4.10 shows how the evidence has been applied to activities aimed at supporting new business start-ups and promoting business spin-outs. The same approach has been taken, starting with net additional outputs, assigning a value per annum and applying assumptions regarding build up and duration.

Figure 4.10: Deriving the value of start-up and spin-out activity

a) Expenditure	£0.197 billion
b) Public sector cost per net additional job	£10,661
c) Net additional jobs (a/b)	18,400
d) Value per net additional job	£30,000
e) Value of net additional benefits p.a. (c x d)	£0.552 billion
f) Present Value of benefits (based on build up of 1 year and duration of 3 years)	£1.826 billion
g) Benefit Cost Ratio	9.3
h) BCR based on sensitivity exercise (2 years duration rather than 3)	6.8
NB It is not possible to split out jobs created and jobs safeguarded from the total above.	

4.73 As regards the value per net additional job, we concluded that a slightly lower Gross Value Added/employee ratio (£30,000) would be appropriate for this activity type, reflecting that many small firms in regeneration areas tend to be engaged in lower value added activities. Clearly, in an appraisal or evaluation context, this adjustment would benefit from a bespoke application of sectoral data for small firms in different regions, which can be requested from the Office for National Statistics or derived through primary survey work.

4.74 As with the general business support category, we have applied an assumption that benefits will build up over one year and last for three years. Arguably, since the net additional outputs are based on the survival of firms for more than 78 weeks (a year and a half) then this may well under-estimate the true benefit. If intervention has enabled a firm to start up and it has survived this long, then a longer duration may be appropriate if there is sufficient evidence available to support that conclusion.

4.75 Applying the data in these two core steps generates an estimated Present Value of £1.83bn of benefits from one year's worth of investment, which equates to a Benefit Cost Ratio of 9.3.

4.76 A sensitivity exercise was undertaken which reduced the duration of benefits from three years to two years (holding the Gross Value Added/employee constant at £30,000) and this generated a Benefit Cost Ratio of 6.8.

Promotion of business enterprise research and development

- 4.77 The final Activity Type valued in this theme is support for business enterprise research and development. Once again, the key unit cost metric is the cost per net additional job at the sub-regional level. Figure 4.11 presents a unit cost analysis that draws on the available evaluation evidence (see Volume II for references). Based on the observations available, the mean unit cost is £57,200 and the range around the mean at the 95% Confidence Interval is from £35,490 to £78,930.
- 4.78 The much higher unit cost for this activity, compared with other business support activities, is influenced by the innovative nature of much of the activity being supported and the higher expense typically associated with R&D, equipment and personnel. Once again, the variation in unit costs will be heavily influenced by the specific circumstances of each project, the nature and scale of investment being made and the severity of the market failure which in turn will dictate the scale of private sector investment.
- 4.79 Figure 4.11 also applies this unit cost ranges to the £654m of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (11,400) is used in the valuation exercise presented below.

Figure 4.11: Business enterprise R&D - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional job	£35,492	£57,209	£78,926
Net additional jobs from annual public sector spend of £654m on this activity	18,400	11,400	8,200

- 4.80 Figure 4.12 shows how the evidence has been applied. This activity is particularly suited to the increasing use of primary survey work focused on deriving firm-specific, Gross Value Added benefits, because here the expectation is that the intervention will lead to productivity benefits (enhanced Gross Value Added/employee) and not necessarily Gross Value Added through employment growth. The exceptions will be those activities which help to bring forward new products and services which have positive consequences for labour demand. However, at the present time there is very little evidence on monetised productivity gains from these kinds of public sector intervention. While we recognise that it is far from ideal, once again we have resorted to a two step process building on net additional employment. Clearly, however, an approach which drew on a unit cost associated with productivity gains could be applied to the same framework as an alternative.

Figure 4.12: Deriving the value of business enterprise research and development activity	
a) Expenditure	£0.654 billion
b) Public sector cost per net additional job	£57,209
c) Net additional jobs (a/b)	11,400
d) Value per net additional job	£35,000
e) Value of net additional benefits p.a. (c x d)	£0.400 billion
f) Present Value of benefits (based on build up of 3 years and duration of 3 years)	£1.620 billion
g) Benefit Cost Ratio	2.5
h) BCR based on sensitivity exercise (lower GVA per job (£33,000) and benefit duration (2 years rather than 3 years))	1.8
NB It was not possible to split between jobs created and jobs safeguarded	

4.81 Since these interventions aim to grow greater ‘added value’ business activity, there may well be arguments for a higher Gross Value Added/employee figure appraisal and evaluation practitioners should consider whether there is firm- or sector-specific data that could legitimately be used. However, for the purposes of this exercise we have adopted what is likely to be a cautious estimate of £35,000 Gross Value Added per employee. The limited evaluation evidence on the topic suggests that these effects will take longer to build up than other business support interventions (three years, rather than one), and that once at full strength they may persist around three years. However, as we note at the end of this section and in Section 9, the evidence base on persistence effects across all Activity Types is a weakness that ought to be addressed in future evaluations.

4.82 Discounting the resulting stream of benefits from one year’s worth of expenditure generates an estimated Present Value of benefits of £1.62bn. Set against the estimated annual expenditure of £0.65bn this generates an estimated Benefit Cost Ratio of 2.5 for this activity type.

4.83 We undertook a sensitivity exercise which applied more cautious assumptions regarding duration of benefits (reducing these from three years to two years) and with a lower Gross Value Added/employee (reduced from £35,000 to £33,000). In combination, these generated a lower Benefit Cost Ratio of 1.8.

Strengths and weaknesses of the approach adopted

Worklessness, skills and training

4.84 The strength of the approach adopted for worklessness, skills and training is that the use of market-based data in these ways is widely recognised as legitimate by departments such as the Department for Work and Pensions, the Department for Business, Innovation and Skills and HM Treasury. Key areas of weakness are in the

depth and consistency of evaluation evidence on a) unit costs (which in turn need to incorporate robust additionality estimates); b) on the appropriate values to assign given the level of progression of the beneficiaries concerned; and c) on matters relating to build up and persistence of benefits. The approach above provides a practical framework for valuation and a useful starting point in terms of the available evidence, but highlights the need for continuing research on all of these areas so that ready reckoners can be developed which are better tailored to the nature of individual interventions and which reflect the diversity of beneficiary characteristics in different parts of the country.

- 4.85 As noted above, this activity type also offers scope to apply non-market data in the form of shadow prices to reflect indirect benefits of tackling worklessness, particularly as they relate to improved health. The study has been able to use research undertaken by the Department for Work and Pensions to provide some preliminary estimate of the size of these effects and we advocate in Section 9 that further work should be undertaken in this important area.
- 4.86 Finally, there is increasing scope, as part of a more general effort to capture data on efficiency savings, to consider the exchequer benefits of interventions and account for these separately from the real resource gains noted above. This is an area that has not been explored well in regeneration evaluation activity, but there are opportunities to consider how it might be developed both in relation to capital activity (where initiatives such as Total Place are relevant) as well as revenue-funded interventions (e.g. Community Budgets).

Enterprise and business development

- 4.87 Here again, the strength of the basic approach is its ability to apply evaluation evidence gathered through well-rehearsed techniques and to assign values by using published market data. The weakness primarily relates to the measurement of Gross Value Added impacts amongst the assisted firms and the additionality associated with the support. Moving to more direct evaluation evidence on Gross Value Added impacts would remove the over-reliance on employment in the valuation process. The increasing use of standardised business survey questionnaires is likely to help in this regard, but it will be important to ensure that the evidence is presented in a consistent way to support the development of ready reckoners and benchmarks. As with all regeneration Activity Categories, it is also important that issues of build up and persistence are explored thoroughly in all future impact evaluations. The estimates applied above, based on the 2009 Regional Development Agency Impact Evaluations, are acknowledged to be initial estimates that need to be supplemented through further evidence.

5. Industrial and commercial property and infrastructure

Introduction

- 5.1 This section discusses the objectives, valuation issues and valuation evidence associated with Theme 2 and its two Activity Categories: **industrial and commercial property** and **infrastructure**.
- 5.2 For each of these Activity Categories we begin with a brief overview of the activity, set out the logic chains and their 'theory of change', summarise the valuation issues and options, present our preferred valuation approach and set out the valuation findings after applying the available evidence. As noted in Section 1, this overview material is underpinned by a more detailed review of the valuation issues and options found in Volume II.

Industrial and commercial property

Overview

- 5.3 Government intervention in the land and property markets has been a dominant feature of regeneration activity for many years. Almost all of the urban policy instruments of the last three decades have had some form of land and property dimension, from the Enterprise Zones and first Urban Development Corporations of the early 1980s through to the Urban Regeneration Companies (1999) and the second incarnation of Urban Development Corporations (2004/05). A considerable amount of Government investment in land and property regeneration was also channelled through the Single Regeneration Budget (from 1994), particularly in Rounds 1 and 2.
- 5.4 Beyond these area based initiatives, specific funding instruments were also available to local authorities and private sector developers to encourage land reclamation and property development. Key examples include Derelict Land Grant (managed by Department for Communities and Local Government's predecessor, the former Department of the Environment (1982 to 1994)) and Urban Development Grant (from 1982) and Urban Regeneration Grant (from 1987) which were merged into City Grant in 1988.
- 5.5 Key Government agencies have also had a remit to stimulate moribund property markets and bring about regeneration. English Estates, the forerunner to English Partnerships (now the Homes and Communities Agency) played an instrumental role

in creating serviced sites across the country in the 1980s and early 1990s. In 1993, when English Partnerships was created as the Government's Urban Regeneration Agency, it grew out of English Estates and subsumed responsibility for Derelict Land Grant from the Department of Environment as well as establishing its own grant-making powers through a Land Reclamation Programme and interventions such as the Partnership Investment Programme. Land Reclamation Programme projects transferred to the Regional Development Agencies on their formation in 1999, but English Partnerships retained overall funding responsibility for the National Coalfields Programme which has sought (via a Service Level Agreement with Regional Development Agencies) to remediate over 100 sites since 1999, and the Homes and Communities Agency still has a land reclamation remit through its Property and Regeneration Programme.

- 5.6 For small workspace activities, where returns are low and/or risk aversion particularly high, the public sector has had to take a clear lead in delivery. However, for most other land and property activity, private sector finance to support a combination of infrastructure investment and construction costs has typically been available. Although funding instruments for land and property have changed several times throughout the last three decades, the one constant has been a focus on the ability of public sector instruments to lever resources from the private sector. Their ability to do so has varied from project to project and place to place. In considering the applicability of evidence from the past, a key issue for land and property activity has been the impact of the current property market downturn and its implications for private sector leverage and thus the unit cost of public sector investment in land and property activity now compared with previously.

Industrial and commercial property logic chain

- 5.7 Regeneration activities undertaken in the land and property activity category include land reclamation, site servicing and the facilitation of new industrial and commercial floorspace, whether directly or in conjunction with the private sector. These activities regenerate by removing blight, enable brownfield land and greenfield sites to come forward for development and accommodate industrial and commercial floorspace and business activity. Ultimately this accommodates new or existing businesses and the creation or retention of jobs which in turn supports Gross Value Added.
- 5.8 This logic chain incorporates aspects of land reclamation and site servicing which are common to the new build housing (see Theme 3). Linked with transport activities (discussed below) including new road building and public transport improvements – these activities have the potential to enable new economic activity and improve productivity by reducing congestion and making jobs and workers more accessible to each other.

How valuation can be approached in this Activity Category

- 5.9 Volume II discusses how the development of land and the construction or refurbishment of built property directly involve creation of a tradable commodity and, as such, already have monetary, market values readily attached to them. The availability of such data is also good, including at local or sub-regional level, though it tends not to be that well disaggregated in terms of end use.
- 5.10 An alternative view – and the one which has prevailed in our assessment below – is that industrial and commercial land and property developments are clearly supported by the public sector not as an end in themselves, but as a way of generating subsequent 'downstream' economic benefits. The rents that businesses pay, and thus the yields which support capital investment in industrial and commercial property, already reflect the production benefits of the property over time. This presents a powerful argument for focusing more on the occupation of the property and the economic benefits that are generated through employment, an approach described in detail in Section 4.
- 5.11 While the downstream economic benefits and the uplift in industrial and commercial property values can both be valued, it is not appropriate to add these values together since they both ultimately represent the same production benefits. As the employment effects offer a more 'complete' capture of the economic benefits generated by industrial and commercial property, it makes sense to focus on these so long as the end use can be a) reasonably predicted (e.g. given planning requirements or through Masterplanning activity) and b) the actual built development is expected to commence soon after the initial land reclamation activity.
- 5.12 In circumstances where land reclamation takes place, but is not followed quickly by development activity, then we believe it is legitimate to value the benefits of the improvement in land quality through the increase in the market value of the land. However, it is important to isolate the improvement in land values which derives from the improvement in land quality alone (e.g. through the removal of contamination or some other reduction in the abnormal costs of downstream development) from any other factors that are likely to influence values such as planning permission or the provision of off-site infrastructure.
- 5.13 Volume II also notes that it may well be the case that there are indirect benefits from the provision of industrial and commercial property linked to (perhaps) transport and environmental improvements. However, these effects are likely to be highly project specific and we argue that they are best considered in relation to their own particular logic chains (e.g. see Section 7, Environmental improvements which considers open space and public realm improvements).

Preferred valuation approach

- 5.14 Taking into account the issues and potential valuation approaches summarised above, our preferred approach to valuation in this Activity Category is, as for the previous theme, in two key steps. The first step involves moving **from regeneration expenditure to net additional outputs** by applying evidence on the cost per net additional full-time equivalent at the local level for industrial and commercial property projects. The second step then involves **applying unit values (Gross Value Added/employee) to the net additional jobs**. Figure 5.1 summarises the valuation approach and key data sources for the commercial property Activity Category.

Figure 5.1: Valuation approach and data sources – industrial and commercial property				
Activity Types	What principal outputs and outcomes will be valued?	Valuation approach	What data sources are being used to derive regeneration outputs and outcomes?	What data sources are being used to derive values?
Industrial and commercial property development	Net employment creation	Use of market based data through revealed preference techniques	Primary data from existing evaluations showing net additional full-time equivalent jobs created/safeguarded	Gross Value Added per employee data from Annual Business Inquiry

- 5.15 The approach here has been to take estimated expenditure on the full range of activity associated with the provision of industrial and commercial property – including the costs associated with land reclamation and site servicing – and apply evaluation evidence on the cost per net additional job (full-time equivalent) for projects of this kind to estimate the number of net additional jobs generated by the intervention. These jobs are then translated into annual Gross Value Added by applying a Gross Value Added/employee ratio derived from the data sources described in detail in Section 4. Evidence on build up and persistence is then applied to derive a stream of monetary benefits which is then discounted to a Present Value.

Applying the evidence

- 5.16 For the purposes of this study, we struggled to find data on land reclamation and site servicing expenditure which distinguished between that spent on industrial and commercial development from that spent on new housing development or open space. DCLG's Land Use Change Statistics were a useful source of proxy data, and this was further refined with actual project data provided by the Homes and Communities Agency for their portfolio of land reclamation projects. However, for most appraisal practitioners this information would already be known through project-specific master planning and cost advice.
- 5.17 Having derived an overall estimate of public sector expenditure on industrial and commercial property development we then applied evaluation evidence on cost per

net additional full-time equivalent for land and property projects at the sub-regional level. Here we used the guidance contained in the Homes and Communities Agency Best Practice Note 15 on the cost per net additional job in targeted regeneration areas. This suggests a **central estimate** of cost per net additional job of £32,300 (after adjusting to 2009/10 prices), within a range where the 'low' end is considered to be £19,200 and the 'high' end is judged to be just over £48,800. While this is not a statistical analysis and there are no Confidence Intervals, it provides a useful range on unit costs for industrial and commercial land and property interventions for appraisal practitioners.

5.18 Figure 5.2 shows this range on cost per net job and applies this to the £761m of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (23,500) is used in the valuation exercise presented below.

Figure 5.2: Industrial and commercial property - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional job	£19,294	£32,312	£48,817
Net additional jobs from annual public sector expenditure of £761m on this activity	39,400	23,500	15,500

5.19 Having derived the number of net additional jobs, Figure 5.3 shows how we have then applied Gross Value Added per employee data using the same sources described in Section 4. The same estimate of £35,000 Gross Value Added per employee has been used here and the same issues of geographical and sectoral variation also apply. Once again, we note that where there is project-specific information available at the appraisal and evaluation stage then this should be used to apply more refined estimates of Gross Value Added/employee based on location and sector of actual or intended occupants.

Figure 5.3: Deriving the value of industrial and commercial property activity – central estimate	
a) Expenditure	£0.761 billion
b) Public sector cost per net additional job	£32,312
c) Net additional jobs (a/b)	23,500
d) Value per net additional job	£35,000
e) Value of net additional benefits p.a. (c x d)	£0.825 billion
f) Present Value of benefits	£7.6 billion
g) Benefit Cost Ratio	9.96
h) BCR based on sensitivity exercise (lower GVA per job (£33,000) and benefit duration (5 years rather than 10 years))	5.8
NB It was not possible to split between jobs created and jobs safeguarded	

- 5.20 Inevitably with land reclamation and construction activity these benefits will take some time to build up. However, once they come on stream the evidence suggests they might be expected to persist for longer than some of the revenue-based activities described above. Evidence from the Regional Development Agency Impact Evaluations suggests that these effects might build up over a three year period before persisting for a further 10 years. As we note later, further evidence on persistence effects would help to refine these estimates further, potentially according to different sub-types of project (e.g. those targeted at new start-ups or particular sectors of operation).
- 5.21 Applying the evidence as set out in Figure 5.3 generates an estimated Benefit Cost Ratio of just under 10. We then applied more cautious assumptions through a sensitivity analysis, by reducing the duration of benefit from 10 years to 5 years, and by reducing Gross Value Added/employee from £35,000 to £33,000, which resulted in a lower Benefit Cost Ratio of 5.8.

Strengths and weaknesses of the approach

- 5.22 There is a good and growing evidence base on the cost per net additional job associated with industrial and commercial property projects. A key area for improvement is in the consistency of questioning relating to deadweight (part of the crucial additionality adjustment), particularly the treatment of occupiers who move from existing premises within an area to new premises supported by intervention. Too often the effects of the enhanced premises on business performance are not properly considered and the approach to measuring additionality is either too draconian (no additional benefits allowed for) or too generous (the relocation is not properly taken into account in the adjustment at all).
- 5.23 There is also a dilemma of whether and how the overall increase in stock of employment space should be taken into account. Where the project represents a genuine addition to the stock of floorspace there are reasonable arguments that property vacated by relocating firms frees up space for other firms and adds to the productive potential of the local economy. These matters need more explicit and consistent treatment in appraisals and evaluations and would merit some practical guidance.
- 5.24 As more evidence comes on stream involving firm-specific Gross Value Added data then it is possible that the reliance on net employment and Gross Value Added/employee ratios will diminish, and this may also help to capture some of the growth and productivity effects referred to above.
- 5.25 As with all Activity Categories, there remains insufficient evidence on persistence effects and this is only something that can be gleaned from longer term monitoring and evaluation, beyond the initial post-development period. However, such

monitoring is rarely incorporated into projects unless there is an ongoing relationship between the public sector and a private sector managing agent.

Infrastructure

Overview

- 5.26 Until comparatively recently, transport infrastructure has played only a limited role in the evolution of regeneration policy. For many years the focus of appraisals of transport investments was on the measurement of direct time savings to users and the associated cost savings. Any impact on economic development and regeneration was not considered as part of the investment decision. In 1999 the Standing Advisory Council on Trunk Road Assessment (SACTRA) raised the possibility of including wider economic benefits (now known as wider impacts) in transport appraisals. It concluded that *“transport improvements could, in principle, improve economic performance [through] reorganisation or rationalisation of production, distribution and land use; effects on labour market catchment areas and hence on labour costs; increases in output resulting from lower costs of production; stimulation of inward investment; unlocking inaccessible sites for development; and triggering growth which in turn stimulates further growth”* (SACTRA, 2000, p.7, para 8).³⁶
- 5.27 This theme was pursued in Eddington study³⁷ which began to quantify these hitherto ignored effects from transport investment. Both the SACTRA and Eddington work echoed emerging interest in agglomeration economies and the specific role that significant transport improvements can play in improving productivity.
- 5.28 While the form that transport improvements have taken remains largely unchanged, the appreciation that these investments can have wider impacts has brought about a more explicit focus within transport appraisal of the inter-relationships between transport infrastructure and key drivers of economic growth. Recently proposed additions to wider impacts include a consideration of labour supply, impacts on output change in imperfectly competitive markets in all investments over £20m, a consideration of agglomeration effects and the impact of the investment on a move to more or less productive jobs in certain circumstances (DfT, 2009).³⁸ A separate Regeneration Report (formerly Economic Impact Report) is also mooted (though this is not likely to be required in all cases) to demonstrate how specific proposed transport investments might impact on economic activity in regeneration areas.

³⁶ SACTRA (2000) *Transport and the Economy*, SACTRA (Standard Advisory Committee on Trunk Road Assessment). London: Department for Environment, Transport and the Regions.

³⁷ Eddington, R. (2006) *The Eddington Transport Study – Main Report: Transport’s role in sustaining the UK’s productivity and competitiveness*. London: TSO.

³⁸ DfT. (2009) *Wider impacts and Regeneration*. London: Department for Transport (TAG Unit 2.8).

- 5.29 Over time we expect that a rich evidence base should emerge from transport project appraisals and evaluations that follow the new WebTAG guidance Unit 2.8 and we believe that this should provide a more robust, quantitative demonstration of the potential impact of transport improvements on regeneration.
- 5.30 Assigning value to the regeneration benefits of enhanced communication has again tended to follow the broad approach used in transport studies when it comes to valuing time savings. DCLG have recently commissioned a study that has sought to understand the value and benefits of establishing and running a local information system (Foley et. Al, 2009).³⁹
- 5.31 There are a number of issues that arise in seeking to measure the extent of both infrastructure impact on business competitiveness, but in general the main approach has been to assess what the effect of improvements are on gross value added.

Infrastructure logic chains

- 5.32 The infrastructure Activity Category has five Activity Types, each of which represents a single logic chain. These logic chains are:
- New road building
 - Highway improvements
 - Traffic calming
 - Public transport improvements
 - Access to broadband.
- 5.33 Both the new road building and public transport improvement activities work through clear and direct logic chains and ultimately have the potential to bring about two principal types of outcomes: a reduction in congestion (and thus reduction in the generalised cost of travel for all road users with consequent productivity benefits); and the ability, in particular circumstances, to open up new development sites and to make it easier for workers to access employment. Thus, a combination of growth and productivity gains can arise from investment in these activities.
- 5.34 Access to broadband has the potential to enhance business growth and productivity, as well as – in the home environment – to enhance learning and skills for individuals. Some of these benefits may emerge without further intervention beyond the improvement in broadband access itself, but in other cases maximising the potential may require further intervention through other Activity Categories such as those considered in Priority Outcome 1 relating to worklessness, skills and training and enterprise and business competitiveness.

³⁹ Foley, P., Alfonso, X., Wiseman, I., Sutton, D. and Cordagnone, C. (2009) *Understanding the value and benefits of establishing and running a local information system*. London: Department for Communities and Local Government.

How valuation can be approached in this Activity Category

- 5.35 The Department for Transport's wider impacts analysis has the objective of estimating the productivity and welfare changes that result from the effects of transport infrastructure on agglomeration and labour supply and which are not properly reflected in existing market prices due to market failure.
- 5.36 The agglomeration metric used by the Department for Transport in the wider impacts work is effective density and is regarded as a measure of the mass of economic activity across the modelled area, thus indicating the accessibility of companies and workers to each other and which can be related to the generalised cost of business, commuting and freight travel. Using this measure the level of agglomeration is estimated for the base case without the intervention. The agglomeration metric is then estimated with the intervention in place. Comparing the two can produce an estimate of the change in agglomeration that result from the transport improvements.
- 5.37 The productivity effect arising from the change in the level of agglomeration is based on the elasticity of productivity with respect to effective density. The estimation is undertaken on a sector by sector basis. Absolute changes in productivity are derived from GDP and employment information on a sector by sector basis. The Department for Transport has derived 'Functional Urban Areas' (based on work that has been based on work undertaken by the Group for European Metropolitan Areas Comparative Analysis. The Department for Transport consider that a transport scheme may have an effect on productivity (and thus economic welfare) if the transport investment is in an area that has "*sufficient proximity to an economic centre or large employment centre*" (p.5, TAG Unit 2.8).⁴⁰ Schemes also need to be more than £20m so scale is also important.
- 5.38 Research into the size of possible agglomeration effects on the productivity of businesses whose relative location might be affected by regeneration investment in land and property was undertaken by Graham et al (2009) and some early findings are presented below in Figure 5.3. It summarises empirical results on agglomeration elasticities by sector. The agglomeration elasticity estimates the effect of urban agglomeration on productivity and the alpha parameter shows how they diminish with distance from source. Readers are referred to the work by Graham et al (2009).⁴¹ The most obvious way in which these effects could be valued is by applying the productivity elasticities to business Gross Value Added.

⁴⁰ DfT (2009) *Wider impacts and Regeneration*. London: Department for Transport (TAG Unit 2.8). www.dft.gov.uk/webtag/documents/project-manager/pdf/unit2.8c.pdf

⁴¹ Graham, D. J., Gibbons, S. and Martin, R. (2009) *Transport investment and the distance decay of agglomeration benefits*. London: Department for Transport. <http://personal.lse.ac.uk/gibbons/Papers/Agglomeration%20and%20Distance%20Decay%20Jan%202009.pdf>

Figure 5.3: Summary of empirical results from Graham et al (2009): production function control function specification, non-linear estimation of alpha

	Sic	Agglomeration elasticity	alpha
Manufacturing	15-40	0.021	1.097
Construction	45	0.034	1.562
Consumer services	50-64	0.024	1.818
Business Services	65-75	0.083	1.746
Economy (weighted average)	15-75	0.043	1.655

Source: Graham, D. J., Gibbons, S. & Martin, R. (2009) *Transport investment and the distance decay of agglomeration benefits*. London: Department for Transport.

5.39 However, the application of these techniques and their relationship to the economic jurisdiction point is still at a relatively early stage. In any situation they would merit careful attention, but specifically in relation to regeneration activity – where in some cases the level of investment and the activities may be relatively modest – there are risks of overstating the level of benefit.

Preferred valuation approach

5.40 At this stage there does not appear to be a sufficient base of evidence relating to the actual benefits of the kind outlined above that derive from **local** transport infrastructure schemes of different characteristics. Without this, it is difficult to go beyond recommending that project-specific appraisal and evaluation work is carried out following the WebTAG 3.8 guidance⁴² and that it would be unwise at this stage to suggest that it is possible to apply an overall multiplier to estimates of Gross Value Added per head at the local level.

5.41 Generalised time savings and wider achievements are worth valuing on a project by project basis where there is a sufficiently strong transport dimension to make this feasible. For highway improvements there are again DfT methodologies and look-up tables, e.g. relating to the benefits of reductions in road traffic accidents.

5.42 It is important to ensure that there is no double-counting with other regeneration Activity Categories and logic chains. Thus, the productive benefits of new road building may already be captured through net additional employment effects on enabled land use. And for public transport improvements it is important to consider whether people helped back into work may already be captured through other dimensions of the measurement framework.

5.43 Taking into account the issues discussed above we are of the view that it is difficult to place a value on regeneration-related transport and communication infrastructure. The evidence above does, however, suggest that more progress could be made in relation to project appraisal at the present time. We believe further research is needed and highlight this as a future research issue in Section 9.

⁴² DfT (2004) *Completing the Affordability and Financial Sustainability (AFS) Tables*. London: DfT.

6. Housing growth and improvement

Introduction

- 6.1 This section discusses the objectives, valuation issues and valuation evidence associated with the first Activity Category in Theme 3 concerned with **housing growth and improvement**.
- 6.2 We begin with a brief overview of the activity, set out the logic chains and their 'theory of change', summarise the valuation issues and options, present our preferred valuation approach and set out the valuation findings after applying the available evidence. As noted in Section 1, this overview material is underpinned by a more detailed review of the valuation issues and options found in Volume II.

Overview

- 6.3 A number of recent Government priorities for housing are an attempt to deal with legacies of earlier housing policies, notably the impacts of deregulation, privatisation and housing subsidy restructuring on the failure of housing supply, tenure polarisation and housing affordability (Stephens et. al, 2003).⁴³ The Sustainable Communities Plan (2003)⁴⁴ identified growth areas where new housing and associated infrastructure were to be promoted, and areas of housing market renewal where demolition and selective new build has been seen as one way of dealing with problems of low demand. It also promoted initiatives to enable first time buyers to access housing and bring about more intermediate forms of tenure which would assist others on lower incomes to get on the housing ladder. Shortly after, the Barker Review of Housing Supply (Kate Barker, 2004)⁴⁵ concluded that various factors, principally land supply and the housebuilding industry's attitude to risk, were holding back the supply of new housing.
- 6.4 Sustainability has also been a key dimension of the housing agenda over the last decade with the introduction first of the EcoHomes standards in 2000 and more recently (in 2006) its replacement by the Code for Sustainable Homes.⁴⁶

⁴³ Stephens, M., Whitehead, C. and Munro, M. (2003) *Lessons from the Past, Challenges for the Future for Housing Policy: An Evaluation of English Housing Policy 1975-2000*. London: Office of the Deputy Prime Minister.

⁴⁴ CLG (2003) *Sustainable Communities: Building for the Future* (Summary, main document and regional action plans). London: Department for Communities and Local Government. www.communities.gov.uk/documents/communities/pdf/146289.pdf

⁴⁵ Barker, K, (2004) *Review of housing supply. Delivering stability: securing our future housing needs*. London: HM Treasury.

⁴⁶ CLG (2006) *Code for Sustainable Homes. A step-change in sustainable home building practice*. London: Department for Communities and Local Government. www.planningportal.gov.uk/uploads/code_for_sust_homes.pdf

Minimum levels of the Code for Sustainable Homes (and other design and quality standards, such as Lifetime Homes and Building for Life), are currently demanded by organisations such as the Homes and Communities Agency over and above the Department for Communities and Local Government's Building Regulations which have themselves continued to demand ever-higher energy efficiency from new homes.

Housing growth and improvement logic chains

- 6.5 Regeneration activities undertaken in the housing activity category include the construction of new housing (for example in Thames Gateway and in Growth Areas) as well as improvements to existing housing stock which include, in some cases, demolition activity in areas of low demand (for example in Housing Market Renewal Pathfinder areas).
- 6.6 **New build** programmes have typically sought to address issues of housing supply at a local or regional level (e.g. the Thames Gateway) and/or sought to change the residential mix of an area by offering a broader array of housing choice both in terms of tenure and type. Conceptually, the investment in new build is likely to involve the public sector seeking to offer incentives to private developers and builders, the level of which will depend largely on the scale of market failure. Inputs will be measured in terms of the scale of incentives alongside other support (e.g. master planning), with outputs primarily comprising additional numbers of dwellings built, with consideration made of tenure, type of property and standard (increasingly in environmental terms).
- 6.7 The rationale for **improvements to existing housing** is typically made on the basis of direct benefits to residents (improved housing quality) and on wider area benefits (in terms of attractiveness).⁴⁷ These underpin the 'theory of change' and stock improvements can be seen as a means to reduce turnover, increasing the attractiveness of an area (in the social and private sectors) and providing a basis for wider quality of life improvements. The activity-output relationship typically explores the numbers of units improved and the extent of that improvement. A legitimate approach to the valuation of benefits is to consider the improvement in the asset value. However, looking beyond such one-off gains it is possible to apply shadow pricing techniques to value of quality of life and health benefits which may be derived from improved stock, particularly rental stock.
- 6.8 Particularly in housing market renewal areas, stock improvements alone are sometimes insufficient to achieve policy objectives and work is needed to **acquire and demolish low demand or very low quality stock and replace it with new build housing**. Although this logic chain is more complex, as it is required to

⁴⁷ This may also sometimes relate to the preservation of the historic environment, as supported by Heritage Lottery Fund and English Heritage grant programmes.

understand the process of re-housing (temporary or permanent) and whether the theory of change assumes new residents to the area or returning residents, it is similar to a new build in that final outcomes may be around changing the mix of tenure and type of property, and thereby also changing the social mix of the neighbourhood. As a result, the output and outcome measures and valuation issues are broadly similar to those discussed above.

- 6.9 **Reducing homelessness** is not a typical regeneration priority, but may be an issue for some areas. Homelessness in this context is assumed to include all groups without a permanent dwelling as well as rough sleeping. The 'theory of change' for interventions may be around addressing local issues of affordability (affecting supply), as well as support to groups experiencing or vulnerable to homelessness. Interventions may therefore be in physical capital, but also include advice and individual payments. Given the diversity of activity and objectives, and the very limited regeneration resources targeted at this activity, we have not attempted to value the benefits of this activity.

How valuation can be approached in this Activity Category

Valuation overview

- 6.10 The valuation of housing growth and improvement has been one of the more challenging areas of the study because of a) the diversity of Activity Types and associated logic chains and b) the fact that in valuation terms, different activities have the potential to generate production benefits for the economy as well as consumption benefits for the direct beneficiaries and society at large.
- 6.11 Figure 6.1 below summarises the main areas of benefit from the key housing Activity Types discussed above and indicates which are production benefits and which are consumption benefits.

Figure 6.1: Housing growth and improvement – main types of benefit and disbenefit

Figure 6.1: Housing growth and improvement – main types of benefit and disbenefit			
	Activity Type		
	New build	Acquisition, demolition and new build	Housing improvement (existing stock)
Key consumption benefits			
Value uplift (private consumption benefits) from new or improved housing	Planning permission for new housing increases land values – the stream of private consumption benefits from housing (shelter, warmth etc) are capitalised in the asset value.		Improvement to houses will tend to increase the asset value reflecting a gain in private consumption benefits
Consumption benefits or disbenefits (society) from gain or loss of amenity	Change in land use (e.g. from greenfield to housing) results in a loss of amenity value to society as a whole	Removal of derelict properties results in an amenity gain to society as a whole	N/A
Consumption benefits (society) from reduced carbon emissions	Regeneration interventions may support new homes with reduced level of CO ₂ emissions compared to market delivery	Potential energy efficiency gains for replacement stock if this is more energy efficient than the stock it replaces	Potential reduction in CO ₂ emissions from improved energy efficiency if this is a component of the refurbishment activity.
Consumption benefits (private) from improved security, health and warmth	N/A – no material gain, except where material differences through additionality relating to security (and potentially long term care via Lifetime Homes)	Potential gain where inferior stock is replaced with modern housing stock	Gain for refurbished stock (e.g. Decent Homes or other retrofit activity)
Key production benefits			
Production benefit to the economy – employment enabled by new housing and associated transport infrastructure	Particularly in housing growth areas (but also applicable to all new housing activity) supporting employment growth through increase in labour supply.	Potential gain where replacement stock seeks to deliberately reprofile housing choice (quality, type, tenure) to support economic development	Less likely, but potential gain where material improvement in quality, type or tenure explicitly to support economic development.

Consumption benefits and disbenefits from provision of new or improved housing

6.12 As part of the 2007 Housing Green Paper, the Department for Communities and Local Government (DCLG) and the Department for Transport set out a joint commitment to develop a methodology to better capture the economic benefits generated by new housing developments which would then be included in Department for Transport's appraisal guidance (New Approach to Appraisal). This guidance was published in draft in January 2010 as part of the Department for Transport's Transport Appraisal Guidance (TAG) series as TAG 3.16D.⁴⁸ While the methodologies adopted have clearly been designed for a transport context, we

⁴⁸ DfT (2010) *Appraisal in the Context of Housing Development* (TAG Unit 3.16D). London: Department for Transport. www.dft.gov.uk/webtag/documents/expert/unit3.16d.php

believe that one aspect in particular has potential for application in all housing contexts.

- 6.13 By adopting the main housing-specific conventions in the TAG 3.16D we suggest a potential approach for establishing the value to society of new housing which, for those dwellings which are net additional (i.e. genuinely unlocked by a regeneration intervention), takes:

the private betterment value, represented by the uplift in land values arising from a planning permission for housing development. This uplift is the value of the land in residential use with planning permission minus the value of the land in its existing use (e.g. agriculture, or industrial or commercial use).

minus

the external impact of the housing development, represented by the loss or gain in the amenity value of the land compared to its existing use.

- 6.14 In transport-related contexts there may be other external costs to take into account, for example the exacerbation of congestion by new housing. TAG 3.16D provides specific guidance on these matters.
- 6.15 In terms of duration/persistence, we do not believe that this benefit can or should be claimed on a recurring basis. This is because the future stream of private benefits is already capitalised in the property value and the recommended source of evidence on external impacts already expresses the different amenity values in perpetuity.
- 6.16 On this basis we believe it should also be possible to apply the same principles to net additional improvements to existing housing stock, where the regeneration intervention is literally adding value to existing assets.

Consumption benefits from removal of derelict properties

- 6.17 The private gains in value apply to projects involving the acquisition and demolition of derelict properties and the provision of new build in the same way as described above. However, just as the provision of new housing on greenfield sites is likely to lead to a loss of amenity value to society, so there is evidence to show that the demolition or substantial renovation of derelict properties would lead to an amenity gain. Here the valuation issues and options are similar to those for environmental improvement discussed later in this section and at length in Volume II and in the Technical Report. In theory, either stated preference or revealed preference methods could be used to estimate the additional value. The pilot stated preference survey conducted as part of this research did not cover derelict sites, but it did include 'derelict properties'. As a result, we have sought to apply those results in an illustrative way to show how valuation could be approached if data were available.

Consumption benefits to society from reduced carbon emissions

- 6.18 The Government's approach to carbon valuation was recently reviewed (July 2009)⁴⁹ and the approach now adopted uses the cost of mitigating the impacts of climate change as the basis for its valuation of carbon. The guidance sets out the values for tonnes of CO₂ that should be used for policies that affect emissions in sectors covered by the EU Emissions Trading Scheme ('traded price of carbon') as well as those that should be used in sectors not covered by the EU Emissions Trading Scheme ('non-traded price of carbon').
- 6.19 For appraisal and evaluation practitioners, the issue is not so much the valuation approach that should be used – for which the Department of Energy and Climate Change guidance is quite explicit – but rather the estimation of the effectiveness of programmes and projects in terms of their net additional contribution to carbon savings.
- 6.20 For new build, this requires some knowledge of the extent of construction under the reference case which may be closely related to the prevailing Building Regulations which the market would have to follow irrespective of any policy intervention (e.g. a requirement to build to a certain level of the Code for Sustainable Homes (for residential)). The local planning authority may also require a minimum BREEAM (Building Research Establishment Environmental Assessment Method) standard for industrial or commercial property. The Homes and Communities Agency developed an in-house model for its new housing activity based on the former Shadow Price of Carbon and the November 2007 English Partnerships price and quality standards. This model enabled appraisal practitioners to assess the net additional gain in carbon emissions from the proposed intervention, over and above market delivery to Building Regulations.
- 6.21 With the recent (April 2010) changes in Building Regulations there is a need for such models to be updated to reflect the changing reference case and the potential impact of potential levels of enhanced intervention. However, it should be recognised that such benefits will be highly project-specific, taking into account local planning authority requirements. Work is therefore needed which sets out transparently the carbon emission reductions applicable to different levels of the Code for Sustainable Homes and BREEAM so that these can be applied within a common framework, but reflecting the characteristics of individual projects.
- 6.22 For refurbished housing, technical advice is widely available which can relate baseline and target Standard Assessment Procedure ratings for energy efficiency with carbon emissions, and the methodology used for the Energy Performance

⁴⁹ DECC (2009) *Carbon Appraisal in UK Policy Appraisal – A Revised Approach*. London: Department of Energy and Climate Change.

Certificates can also generate Standard Assessment Procedure and emission assessments simultaneously.

- 6.23 DCLG's English House Condition Survey 2007 Annual Report⁵⁰ reviews the potential energy performance of the housing stock if cost-effective measures (Energy Performance Certificates recommended energy efficiency measures) were fully implemented. The same chapter also looks at the impact on Standard Assessment Procedure, carbon emissions and cost savings. However, the English House Condition Survey is unable to separate out the effects of improvement to existing dwellings from the effects of new build/demolition/change of use. Moreover, at a sector level, it does not separate these issues from sales/transfers from one sector to another. Given the complexity of private and publicly funded investment this means that it is not able to identify which dwellings are benefiting from what funding stream.
- 6.24 A key constraint in this area is therefore a lack of programme-specific data on the effects of specific refurbishment activities on Standard Assessment Procedure ratings and emissions. The evaluation of Warm Front generated quantitative estimates of carbon reductions, but this initiative focused solely on energy efficiency, not wider housing improvements which would typically be the focus of regeneration.
- 6.25 The main constraint on the valuation of improvements to existing stock is therefore being able to calibrate the energy efficiency focus/content of general housing refurbishment activity. There needs to be a stronger emphasis in the evaluation of refurbishment activity on these issues to generate more evidence that could be used for valuation purposes in regeneration appraisals.

Consumption benefits from improved warmth, security and health

- 6.26 Most approaches taken to the valuation of other benefits from refurbished housing are not based on primary research. Studies tend to review available and appropriate evidence from elsewhere and then import the relevant evidence and data in order to estimate benefits and costs. Volume II reports on the Building Research Establishment's toolkit that provides a method of measuring and showing the value of private sector housing intervention to health, society and quality of life. The evidence based toolkit utilises Health Impact Assessments to show the impact of housing intervention measures on wider health benefits as well as a cost calculator based on the Housing Health and Safety Rating System. Some studies have then employed QALYs or 'Quality Adjusted Life-Year' as a way of trying to estimate the monetary value of gains in the well-being of beneficiaries of housing improvements.

⁵⁰ DCLG (2009) *English House Condition Survey 2007*. London: Department for Communities and Local Government. www.communities.gov.uk/documents/statistics/pdf/1346262.pdf

- 6.27 Two Health Impact Assessments of the Decent Homes Programme in Sheffield and Ealing (see Gilbertson et al, (2006);⁵¹ and (2008)⁵² have utilised the Housing Health and Safety Rating System as a way of estimating the reduced likelihood of harm to health arising from the Decent Homes interventions. The study in Ealing also carried out a preliminary cost benefit analysis using methods which give a monetary value to gains in personal health status (QALYs), reduced costs to the NHS and criminal justice system, and a reduction in working days lost through ill health.

Production benefits from employment growth enabled by new housing and associated transport infrastructure

- 6.28 The final key area of housing-related benefit explored by the research has been the production benefits that arise from employment growth enabled by new housing. New dwellings support long-term trends relating to changes in household composition, but a proportion of new housing supply will facilitate economic growth. In some areas (such as those supported by Growth Point funding) employment growth is constrained by a lack of housing or a lack of affordable housing, while in lower demand areas (such as Housing Market Renewal Pathfinder Areas) the type and quality of housing is the constraint, rather than a lack of supply.
- 6.29 In considering what proportion of new housing supply can legitimately be taken to represent a driver of economic growth in regeneration areas, a key consideration is the extent of out-commuting which can be informed by Census data.
- 6.30 Having made an assumption about the extent of new housing that facilitates employment growth within target regeneration areas, it is possible to use data on household size, working age population and the employment rate to estimate the number of net additional jobs enabled and their market value, revealed via the application of Gross Value Added/employee ratios.
- 6.31 In the analysis below we have undertaken an *illustrative* valuation to show how these principles could be applied, adopting a cautious approach which assumes that only 25% of dwellings support employment growth. Clearly this will vary across the country and each development needs to be assessed on its own merits. There is considerable scope to examine these issues in more detail and more explicitly as part of local economic assessments and local investment planning activity.

Preferred valuation approach

- 6.32 Taking into account the issues and potential valuation approaches summarised above, and the data limitations which currently exist in relation to certain activities,

⁵¹ Gilbertson, J., Green, G. and Ormandy, D. (2006) *Decent Homes Better Health. Sheffield Decent Homes Health Impact Assessment*. Sheffield: CRESR, Sheffield Hallam University.

⁵² Gilbertson, J., Green, G., Ormandy, D. and Stafford, B. (2008) *Decent Homes Better Health: Ealing Decent Homes Health Impact Assessment*. Sheffield: CRESR, Sheffield Hallam University.

our preferred approach to valuation in this Activity Category would be in two key steps.

6.33 The first step involves moving **from regeneration expenditure to net additional outputs** (net additional homes, net additional refurbished homes) by applying evidence on unit costs at the local level for different types of housing activity as shown in Figure 6.1. The second step then involves **deriving and applying unit values to these net additional units to reflect the nature of the benefits being generated in each case**. Figure 6.2 summarises the preferred valuation approach and key data sources.

Figure 6.2: Summary of preferred valuation approach and data sources – housing growth and improvement				
Activity Types	What principal outputs and outcomes will be valued?	Valuation approach	What data sources are being used to derive regeneration outputs and outcomes?	What data sources are being used to derive values?
New build	Net new dwellings	Use of market based data through revealed preference techniques Adjusting for loss of amenity value derived using stated preference techniques Cost to society of carbon emissions revealed through traded and untraded price of carbon (tCO ₂)	Primary data from appraisals (HCA) and existing evaluations (e.g. HMR) on relationship between expenditure and: - net additional dwellings; - net additional reductions in carbon savings (where known) - net additional FTE jobs enabled through the creation of new housing	Valuation Office Agency (VOA) data on land prices Amenity values by land type from Entec/eftec study for ODPM/Defra Traded and untraded price of carbon (DECC) GVA/employee (Annual Business Inquiry)
Improving existing stock	Net improvements to existing dwellings	“	Primary data from appraisals (HCA) and existing evaluations (e.g. HMR) on relationship between expenditure and net additional dwellings refurbished and net additional reductions in carbon savings (where known)	Valuation Office Agency (VOA) data on land prices Amenity values by land type from Entec/eftec study for ODPM/Defra Traded and untraded price of carbon (DECC)
Demolition/new build	Net new dwellings	“	Primary data from appraisals (HCA) and existing evaluations (e.g. HMR) on relationship between expenditure and net additional dwellings following acquisition and demolition	Valuation Office Agency (VOA) data on land prices Amenity values by land type from Entec/eftec study for ODPM/Defra
Note: for the reasons discussed above it has not been possible to value Reducing homelessness.				

Applying the evidence

New build housing

- 6.34 Figure 6.3 presents the evidence on unit cost for this activity type, i.e. the cost per net additional dwelling at the sub-regional level. This has drawn on a database provided by the Homes and Communities Agency where we analysed 25 observations that provided data on both total public sector costs and on net additional dwellings, thus enabling a unit cost figure to be derived. After excluding one sizeable outlier, the mean unit cost is just over £77,400 and the range around the mean at the 95% Confidence Interval is from £59,800 to just over £95,000.
- 6.35 The unit cost will be heavily influenced by property market conditions and thus how much the private sector is willing to contribute and the gap the public sector must meet. It will also be linked to the physical condition of the sites and premises and the nature of the proposed intervention. For example, more affordable housing will require greater levels of public sector support, while higher sustainability standards can also increase costs. Therefore, while unit cost benchmarks may be useful, this is clearly an area where project-specific appraisal and evaluation data should be used wherever possible.
- 6.36 Figure 6.3 also applies this unit cost range to the £5.3bn of estimated annual regeneration expenditure on new housing activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (68,300) is used in the valuation exercise presented below.

Figure 6.3: New build housing - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional dwelling	£59,838	£77,427	£95,017
Net additional dwellings from annual public sector expenditure of £5.3bn on this activity	88,500	68,300	55,700

- 6.37 Figure 6.4 shows how values have been derived for two of the main components of benefits of new build housing discussed above: first, the consumption benefits arising through private betterment minus the disamenity associated with the change in land use; and second, the production benefit from employment enabled by new housing.
- 6.38 Ideally we would wish to value a third component for new build housing, namely a reduction in carbon emissions resulting from more energy efficient dwellings, but the estimation of these benefits is highly project-specific and very difficult to generalise a) in the absence of consistent monitoring data on out-turn performance of regeneration interventions and b) against a rapidly changing reference case driven by changes in national Building Regulations. These need to be applied at the appraisal and

evaluation stage for individual projects, drawing on key technical data relating to the environmental performance of the proposed intervention and a clear account of the environmental performance under the reference case.

Figure 6.4: Deriving the value of new build housing activity		
	Consumption benefits – private betterment minus disamenity	Production benefit from employment enabled by new housing
a) Expenditure	£5.296 billion	
b) Public sector cost per net additional dwelling	£77,427	
c) Net additional dwellings (a/b)	68,300	18,000 net additional jobs
d) Value per net additional output	£29,160 per net additional dwelling, taking into account betterment and disamenity	£35,000 per net additional job
e) Value of net additional benefits p.a. (c x d)	£1.99 billion (one-off)	£0.633 billion (build up over 3 years, duration of 30 years)
f) Present Value of benefits	£1.99 billion	£11.77 billion
g) Benefit Cost Ratio	2.6	
h) BCR based on sensitivity exercise (lower GVA per job for production benefit (£33,000) and lower benefit duration (15 years rather than 30 years))	1.7	

Consumption benefits from private betterment minus disamenity

- 6.39 The WebTAG approach involves the use of land values per hectare. Given the prevalence of property advice in land and property business cases, it should be possible to derive bespoke estimates of the market-based data and densities above and make the same adjustments for opportunity cost as recommended in WebTAG 3.16D.⁵³
- 6.40 The estimation of the private betterment value involves the change in land value triggered by a residential planning permission. Thus, if the site was previously used for industrial activity, then the betterment is the difference between the industrial land value and the value of the site if residential land values were assumed. Similarly, if the site was previously greenfield, then the assumption would be that the starting value would be agricultural. The estimates in WebTAG 3.16D use Valuation Office Agency July 2009 data. For the example above, we took the average residential land value for “bulk land” in England and Wales of £1.77m and assumed that all of the land was brownfield. Following the guidance, we then deducted an average England and Wales value for industrial use (the recommended proxy for previously developed land) of £600,000 per hectare. This generates a private betterment value of £1.17m per hectare.

⁵³ DfT (2010) *Appraisal in the Context of Housing Development*. TAG Unit 3.16 In Draft, Department for Transport. available at www.dft.gov.uk/webtag

- 6.41 Allowing for the loss of amenity value involves a 'benefits transfer' or 'value transfer' approach, drawing on the mean reported estimates of the external benefits of undeveloped land reported in Table 7.10 of the 2001 study for the former Office for the Deputy Prime Minister by eftec and Entec).⁵⁴
- 6.42 For non-previously developed land, WebTAG 3.16D points users to the estimates of four types of land for which amenity estimates are available urban fringe (forested land), urban fringe (greenbelt), intensive agricultural land and extensive agricultural land. For previously developed land, the guidance suggests that the external impact of the development should be assumed as zero, noting that this can be regarded as a conservative assumption since there might well be external benefits from redevelopment of brownfield land, for example, improving the aesthetic value of the area surrounding the development.
- 6.43 For the illustrative valuation above, and even though it represents an internal inconsistency with the private betterment assumption, we have estimated the loss of amenity by assuming that the original land use was greenfield. It would be more consistent to assume the site was previously developed land and thus had a zero loss of amenity, but we have applied this alternative assumption to demonstrate the approach as well as avoid overstating the result. Using the WebTAG 3.16D housing impacts model, the external amenity value per hectare for intensively farmed agricultural land over 30 years is reported as £3,658 (in 2009 prices).
- 6.44 This is then deducted from the one-off betterment value or uplift in land value (which capitalises the future stream of benefits), to generate a per hectare benefit of £1.166m per hectare. We then translated this benefit per hectare into a benefit per dwelling by assuming, for this exercise, an average density of 40 dwellings per hectare (again, this assumption will vary from site to site and we would suggest that project-specific data is used wherever possible). For this particular set of illustrative assumptions this suggested a benefit per dwelling of £29,159.
- 6.45 Applying this to the number of net additional units leads to our estimate that one year's investment in new build housing would generate in the region of £1.99bn of this private benefit.
- 6.46 Clearly this approach is particularly sensitive to land values and the Valuation Office Agency data⁵⁵ shows that there is considerable variation across the regions of England. Since project appraisals will typically draw on specialist property advice this should be used to develop bespoke estimates of 'before and after' values to feed into the analysis above.

⁵⁴ ODPM (2001) *Valuing the external benefits of undeveloped land: Main document*. London: Office for the Deputy Prime Minister, London. www.communities.gov.uk/archived/publications/planningandbuilding/valuingexternal

⁵⁵ The latest data is available from the VOA at: www.voa.gov.uk/publications/property_market_report/

Production benefits from employment enabled by new housing

- 6.47 Following the approach outlined earlier, we have applied an illustrative assumption that 25 per cent of these net additional dwellings support employment growth in targeted regeneration areas and the rest are changes in household composition and out-commuting to other areas. Again, this is a working assumption to illustrate the approach and one that we believe will be cautious, particularly for growth areas. The proportion of new dwellings that support employment growth in target areas should be developed and tested on a project-by-project basis drawing on input from property advisors and discussions with local planning authorities.
- 6.48 We then drew on DCLG's housing projections to estimate the average household size (2.28) and on data from the Office for National Statistics on the working age population (73%) and the employment rate (73%). Again, these can and should be calibrated to the requirements of each project. Applying these assumptions led to our estimate that 68,300 net additional dwellings might support 18,000 net additional jobs (full-time equivalents).
- 6.49 We have applied the market price of employment, revealed through Gross Value Added, using the same approach and data sources discussed at length in Section 4. Once again, regional and sub-regional variations in Gross Value Added should be applied where appropriate. This would generate an estimated Gross Value Added benefit of £0.63bn per annum.
- 6.50 We further assume that on average these benefits will build up over three years and have a duration of 30 years. In the absence of any empirical evaluation evidence this is our judgement and, we believe, a cautious one. Further research and evaluation on the issue of persistence in housing projects would be beneficial. On this basis we estimate that the Present Value of production benefits from one year's investment in new build housing activity is in the region of £11.77bn.
- 6.51 It is legitimate to add the consumption and production benefits of new housing together and relate these to the level of investment. This leads to an estimated Benefit Cost Ratio for new housing of 2.6. We undertook a sensitivity exercise which reduced the duration of benefit from 30 years to 15 years and which applied a lower Gross Value Added/employee (£33,000 rather than £35,000) for the production benefit. This resulted in an estimated Benefit Cost Ratio of 1.7.

Improving existing housing stock

- 6.52 Published evidence on unit costs for housing improvements is surprisingly limited, particularly in view of the substantial investment in Decent Homes activity in recent years. The evidence used to derive unit costs for this exercise is based on three sources: The National Audit Office's 2009 report on the Decent Homes Programme; DCLG's 2009 National Evaluation of Housing Market Renewal Pathfinders; and a

2004 House of Commons Select Committee Report on Decent Homes activity. Adjusting for 2009/10 prices, this suggests the range presented in Figure 6.5. Clearly variations in unit costs will be driven primarily by the specific nature of the works required, e.g. it will cost more to bring some homes up to Decent Homes standard than others based on the state of disrepair, the original construction method and the design of the units (e.g. tower blocks versus terraced houses). Once again, this is an area where project or programme specific appraisal and evaluation evidence should be available and applied.

- 6.53 Figure 6.5 applies this unit cost range to the £1.02bn of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. The central estimate of outputs (56,500) is used in the valuation exercise presented below.

Figure 6.5: Housing improvement - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Medium unit cost	High unit cost
Public sector cost per net additional dwelling refurbished	£8,812	£17,977	£27,141
Net additional dwellings refurbished from annual public sector expenditure of £1.02bn on this activity	115,300	56,500	37,400

- 6.54 Figure 6.6 shows how values have been derived for the benefits of housing improvements.

Figure 6.6: Deriving the value of benefits from improvements to existing housing stock		
	Consumption benefits – private betterment minus disamenity	Consumption benefit to society from improved security, safety and warmth
a) Expenditure	£1.016 billion	
b) Public sector cost per net additional dwelling improved	£17,977	
c) Net additional dwellings improved (a/b)	56,500	
d) Value per net additional dwelling improved	£2,916	PV £31,950 over 30 years
e) Value of net additional benefits p.a. (c x d)	£0.165 billion	
f) Present Value of benefits	£0.165 billion	£1.829 billion
g) Benefit Cost Ratio	2.0	
h) BCR based on sensitivity exercise (benefit duration 15 years rather than 30 years))	1.3	

Consumption benefits from private betterment minus disamenity

- 6.55 Other things being equal we would expect refurbishment activity to lead to some improvement in asset value. In order to place a preliminary, indicative value on this

strand of activity we have estimated that 10 per cent of the illustrative benefit of new build housing (£29,159) might be ascribed to housing improvements, leading to a per unit value of private consumption benefit of £2,916.

- 6.56 Clearly the extent of private betterment, and the degree to which there is some change in amenity, will be highly project-specific and sensitive to a combination of local property market and the pre-intervention condition of the properties concerned. Nevertheless, we see no reason in principle why the general approach outlined for new housing could not be applied for refurbished housing, hence the working assumption above.
- 6.57 As with new build, this benefit is a one-off. On this basis the estimated value of this type of benefit from one year's worth of investment in refurbishment activity would be £0.17bn.

Consumption benefit to society from improved security, safety and warmth

- 6.58 We noted earlier how a number of Decent Homes Health Impact Assessments had estimated the wider benefits to society arising from refurbishment activity. At the present time there is little such evidence available. In order to place a preliminary value on this strand of activity we have applied the results from the Ealing Decent Homes Health Impact Assessment. This generated an indicative Benefit Cost Ratio of 1.8 in total (based on benefits occurring over a 30 year period), most of it through the benefits of enhanced security. Based on the annual investment in Figure 6.6, this would generate an estimated £1.83bn of benefits.
- 6.59 It is legitimate to add these benefits together, leading to an estimated overall benefit of £1.99bn, or a Benefit Cost Ratio of just under 2.0.
- 6.60 We undertook a sensitivity exercise which reduced the duration of benefits from 30 years to 15 years, leading to a lower Benefit Cost Ratio of 1.3.
- 6.61 We believe that more programme-specific research in this area would enhance the valuation evidence that could be used by practitioners in appraisals.

Acquisition, demolition and new build

- 6.62 Published evidence on unit costs for this activity is very limited indeed. The evidence used to derive unit costs for this exercise is based solely on DCLG's 2009 National Evaluation of Housing Market Renewal Pathfinders. Adjusting to 2009/10 prices, this suggests a cost of acquisition and demolition of just under £36,700. The cost of new build will vary (see above) and in order to come to a range on total public sector unit costs for this activity we have added the cost of acquisition and demolition to the low, average and high ends of the range on new build. This combined cost range is presented in Figure 6.7, with a central value of £114,100.

- 6.63 As with housing improvements, variations in unit costs for this activity will be driven primarily by the specific nature of the works required, the costs of acquisition (which in turn will be closely related to local housing markets as well as property condition) and the design of the new build. Project or programme specific appraisal and evaluation evidence should be applied wherever possible.
- 6.64 Figure 6.7 applies this unit cost range to the £148m of estimated annual regeneration expenditure on this activity which generates a range on the number of net additional outputs generated. Adopting the central estimate on unit cost, such investment might support the acquisition and demolition of 1,200 derelict properties and their replacement with 1,200 replacement dwellings. These figures have been used to illustrate the valuation exercise presented in Figure 6.8.

Figure 6.7: Acquisition, demolition and new build - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Medium unit cost	High unit cost
Public sector cost per net additional dwelling replaced	£96,516	£114,105	£131,695
Net additional dwellings replaced from £148m of annual public sector expenditure on this activity	1,500	1,200	1,100

- 6.65 Figure 6.8 shows how values have been derived for the benefits of acquisition, demolition and new build activity.

Figure 6.8: Deriving the value of benefits from acquisition, demolition and associated new build activity		
	Consumption benefits – private betterment minus disamenity	Consumption benefit - external benefits arising from enhanced visual amenity
a) Expenditure	£0.148 billion	
b) Public sector cost per net additional dwelling replaced	£114,105	
c) Net additional dwellings (a/b)	1200	129.7 derelict property restoration projects of 10 properties each
d) Value per net additional dwelling restored/replaced	£29,159	£322,000 per annum per 10-dwelling project
e) Value of net additional benefits p.a. (c x d)	£0.038 billion (one off)	£0.042 billion (3 year build up and 30 year duration)
f) Present Value of benefits	£0.038 billion	£0.777 billion
g) Benefit Cost Ratio	5.5	
h) BCR based on sensitivity exercise (benefit duration 15 years rather than 30 years)	3.7	

Consumption benefits from private betterment minus disamenity

- 6.66 As with the other two Activity Types above, we begin by estimating the consumption benefits arising from private betterment minus disamenity. To illustrate the method, we have applied the same level of benefit (£29,159) to this Activity Type as for the others, noting that this crude approach will be subject to much variation linked to local property markets and could be refined through the use of project-specific data and specialist property advice at the local level. On this basis, we estimate that this strand of benefit could generate in the region of £0.038bn as a one-off.

External consumption benefits arising from enhanced visual amenity

- 6.67 The right hand side of Figure 6.6 shows how we have applied the results of this study's stated preference pilot survey to provide an illustrative estimate of the broad order of magnitude of amenity benefits to society from reductions in dereliction. Details of the pilot stated preference survey, which provides an estimate of the value of restoring derelict properties that improves the visual appearance of built-up areas, are set out in detail in this study's Technical Report which also includes extensive discussion on the pilot hedonic pricing study which was also undertaken as part of this work.
- 6.68 From the pilot stated preference survey, estimated willingness to pay is £3.39 per restored property per household per year. The attribute on which this result is based relates to the restoration of 10 properties.
- 6.69 Applying this unit value requires a number of assumptions. First, if we assume that the regeneration investment under consideration led to 1,297 new properties replacing 1,297 derelict properties, and if we allow 10 properties per 'project', then that would represent 129.7 projects. A value per project can be calculated by multiplying the unit willingness to pay value accordingly, i.e. giving £33.90 per project, and aggregating over an assumed beneficiary population. If we further assume that the number and characteristics of beneficiaries per project is the same as the stated preference pilot survey (Seaham, population 21,000 or c.9,500 households), then this would generate a value of £322,000 per annum per project. It is reasonable to assume that these benefits would take some time to emerge (say three years), but that they would then persist for 30 years. Assuming a constant level of benefit over a 30 year period generates a Present Value of benefit of £0.77bn.
- 6.70 It is important to note that **the above should be interpreted as an illustrative calculation only. It is subject to a number of caveats generated by the value transfer to a national benefit estimate context.** For example, unit willingness to pay is assumed to be constant: a reasonable expectation based on economic theory would be that unit willingness to pay would diminish as the number of restored properties within a project increases. There is also the issue of how reflective the

general environmental amenity in Seaham and the socio-economic characteristics of the assumed beneficiary population is of the wider scale over which the unit value is applied. Furthermore, the population is dependent upon the size of assumed beneficiary population for a given project.

- 6.71 It is legitimate to sum these two types of benefits together, leading to an estimated overall benefit of just over £0.815bn from one year's worth of investment, equivalent to a Benefit Cost Ratio of 5.5.
- 6.72 We undertook a sensitivity exercise which reduced the duration of benefits from 30 years to 15 years, leading to a lower Benefit Cost Ratio of 3.7.

Strengths and weaknesses of the approach adopted

- 6.73 Valuation of housing growth and improvement activities lends itself to a variety of techniques, including the use of market prices to measure the betterment value associated with changes in land use and improvements to property as well as the well-rehearsed application of stated preference evidence to take account of the gain or loss in amenity which results from development.
- 6.74 The main areas of weakness in the approach are the lack of evidence on the effectiveness of new housing and housing improvement programmes in terms of their impact on carbon emissions. A suite of carbon saving ready reckoners needs to be developed which can be used by those engaged in the appraisal of new build and refurbishment interventions. These also need to be kept up to date as different standards (including Building Regulations) change.
- 6.75 The pilot stated preference survey undertaken as part of this research demonstrated the scope for generating usable estimates for the external impact of derelict property (and other environmental attributes), and as we note in Section 9 there is scope for this to be developed to generate reliable estimates capable of being applied in different scales and contexts.

7. Communities, environment and neighbourhood renewal

Introduction

- 7.1 This section discusses the objectives, valuation issues and valuation evidence associated with three further Activity Categories within Theme 3, namely **community development, environmental improvement** and **neighbourhood renewal**.
- 7.2 For each of these Activity Categories we begin with a brief overview of the activity, set out the logic chains and their 'theory of change', summarise the valuation issues and options, present our preferred valuation approach and set out the valuation findings after applying the available evidence. As noted in Section 1, this overview material is underpinned by a more detailed review of the valuation issues and options found in Volume II.

Community development

Overview

- 7.3 An area often linked with housing at the neighbourhood level, due to the important role that Tenants and Residents Associations can play, is **community development**. This policy area has evolved significantly over the last decade. Examples include the requirement for former Local Strategic Partnerships to involve local communities and the voluntary sector, which was facilitated in its early stages by a Community Empowerment Fund and the establishment of Community Empowerment Networks. Community empowerment was seen as a key strand of many dimensions of the Government's National Strategy for Neighbourhood Renewal, notably New Deal for Communities, Neighbourhood Management Pathfinders and Neighbourhood Wardens.
- 7.4 The creation of the Office of the Third Sector within the Cabinet Office in 2006 provided further impetus for community and voluntary sector activity and was followed by a wide-ranging review of the role of the sector in social and economic regeneration. Of particular relevance to regeneration, the strategy that emerged included initiatives focused on community assets, capacity building support targeted on developing financial sustainability, encouragement for the creation and growth of social enterprises, the promotion of volunteering, small grants for local groups and a programme of endowments in community organisations to secure their long term grant-giving ability. The objective of these activities is to bring about stronger, more active and better connected communities.

Community development logic chains

- 7.5 A common feature of this set of activities is the ‘theory of change’ that greater civic participation, community development and generally resident involvement in neighbourhood activities can bring outcomes such as greater trust, better quality of life and can feed through into economic benefits such as employment and the desirability of a neighbourhood. Conceptually, community development activities are seen at the heart of many regeneration programmes.
- 7.6 The community development Activity Category has four Activity Types, each of which represents a single logic chain presented in Volume II. These logic chains are:
- Volunteering
 - Investment in community organisations
 - Formal participation
 - Community facilities.

How valuation can be approached in this Activity Category

- 7.7 Volume II provides a detailed discussion of the measurement and valuation issues relating to community development activity. It notes how there is a tendency for practitioners and evaluators to view community involvement as an operating procedure or principle rather than a substantive intervention designed to generate a clearly defined set of outcomes. Studies that seek to quantify outcomes or impacts or value these are far less common, principally because of the difficulty of conceptualising what are in reality a diverse set of logic chains from community development activities to multiple outcomes. Put simply, it is not always clear what the ultimate benefits of community development activity might be.
- 7.8 Instead the main evidence base focuses on the possibilities for valuing volunteer activity which, as a key component of community development work, has some applicability within a regeneration context. Debates within this field centre on the relative merits of different techniques for valuing volunteer time as an input or, alternatively, the possibilities for valuing activities through measuring outputs (revenue) instead.

Preferred valuation approach

- 7.9 Taking into account the issues and potential valuation approaches summarised above, our preferred approach to valuation in this Activity Category involves the use of shadow pricing techniques as shown in Figure 7.1 on the following page. For volunteering activity we use volunteer time and the minimum wage as a proxy for the value of the input and translate that into Gross Value Added using established ratios for employment costs to Gross Value Added for sectors we believe fit well with the

activities delivered by many social enterprises. For investment in community organisations we have taken the level of local income generated and treated that as turnover in order to derive the 'social Gross Value Added' arising from investment community organisations.

Figure 7.1: Valuation approach and data sources – community development				
Activity Types	What principal outputs and outcomes will be valued?	Valuation approach	What data sources are being used to derive regeneration outputs and outcomes?	What data sources are being used to derive values?
Volunteering	Net additional volunteers	Shadow pricing techniques, using wages as proxy for benefits	Institute for Volunteering Research on gross cost per gross volunteer; evaluation evidence on additionality. Citizenship Survey on hours of volunteering	Minimum hourly wage x 1.21 for non-wage labour costs Employment costs to GVA via GVA/employee for health and social care activities (Annual Business Inquiry)
Investment in community organisations	Net additional social enterprise assists	Shadow pricing techniques, using local income generated as proxy for turnover	Office for Third Sector data on average turnover, support for new starts vs. existing enterprises and evaluation evidence on average additional benefits to turnover	Turnover to GVA via GVA/turnover ratios for health, social care, education and 'other service activities'
Note: for the reasons discussed below it has not been possible to value Formal participation or Community facilities.				

7.10 We have not attempted to value the benefits of the two other Activity Types in this Activity Category. In terms of formal participation, we concluded that there was insufficient evidence to value the benefits of this activity type. Most of the evidence on benefits is qualitative. In addition, it is difficult to isolate the costs of encouraging participation from the costs of delivering individual regeneration projects.

7.11 The difficulty with valuing community facilities is the sheer variety of regeneration and service activities accommodated within or delivered through them. This makes an across-the-board valuation difficult in the absence of more project specific data. However, valuation of benefits from such activity is possible at the project level so long as the beneficiaries and logic chains are clearly identified. The stated preference pilot focuses on outdoor facilities: play areas for children, sports pitches, allotments and community gardens. As it is not an ideal match to wide range of community space supported through regeneration we have not attempted to replicate the illustrative valuation approach described above for housing improvements.

Applying the evidence

Volunteering

- 7.12 In order to establish the unit costs associated with volunteering – i.e. the cost per net additional volunteer recruited - we have drawn on two sources of evidence. A study supported by the Institute for Volunteering Research⁵⁶ provided estimates of gross costs per gross volunteer recruited across eight different volunteering programmes involving over 85,500 volunteers. An evaluation of the South Yorkshire Social Infrastructure Partnership (SIP) by CRESR at Sheffield Hallam University⁵⁷ provided some useful evidence on additionality, which suggested that deadweight was of the order of 25 per cent and displacement in the region of 5 per cent.
- 7.13 Applying this evidence, and adjusting for 2009/10 prices, reveals an average public sector cost per net additional volunteer of £944. The 95% Confidence Interval provides a very wide range around the mean which suggests a low end of the range around £300 per net additional volunteer rising to just over £1580. Figure 7.2 shows this range and its application to the estimated £3.5m per annum of regeneration expenditure on this activity. The central estimate of 3,700 net additional volunteers is used in the analysis below.

Figure 7.2: Volunteering - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional volunteer	£304	£944	£1,584
Net additional volunteers from £3.5m of public sector spend p.a. on this activity	11,500	3,700	2,200

- 7.14 Figure 7.3 shows how values have been estimated for the one of the benefits of volunteering activity, namely the value of the inputs made by the volunteers themselves.

Figure 7.3: Deriving the value of benefits of volunteering activity	
a) Expenditure	£0.0035 billion
b) Public sector cost per net additional volunteer	£944
c) Net additional volunteers (a/b)	3,700
d) Value per net additional volunteer	£1,020
e) Value of net additional benefits p.a. (c x d)	£0.0038 billion
f) Present Value of benefits (build up and duration of 1 year (consecutive))	£0.0038 billion
g) Benefit Cost Ratio	1.1
h) BCR based on sensitivity exercise	N/A – based on minimum wage with only 1 year of benefit

⁵⁶ Gaskin, K. (1999) Valuing volunteers in Europe: a comparative assessment of the Volunteer Investment and Value Audit. *Voluntary Action*, 1(4), pp.35-49.

⁵⁷ CRESR, MTL and COGS (2010) *Evaluation of the South Yorkshire Social Infrastructure Programme*. Sheffield: CRESR, Sheffield Hallam University.

- 7.15 We have assumed each volunteer earns the minimum wage for those aged 22 and over of £5.80/hour multiplied by 1.21 to take account of non-wage labour costs.⁵⁸ We have then drawn on the findings of the Citizenship and Household Survey which estimates that each volunteer contributes three hours per week for 48 weeks a year. This equates to an annual equivalent employment cost of £1,010 per net additional volunteer.
- 7.16 We have then translated these 'employment' costs of volunteering into Gross Value Added by drawing Gross Value Added/employment cost ratios derived from Annual Business Inquiry data by sector. At the England level, the ratio of Gross Value Added to employment costs for human health and social care activities – which we believe to be a reasonable proxy for community based organisations - is 1.01. Clearly this could be tailored to the activities being pursued by individual social enterprises where these are known. On this basis the Gross Value Added per annum – which we might term 'social Gross Value Added' – is £1,020 per net additional volunteer, giving rise to annual benefits of £3.8m. The CRESR evaluation mentioned above encourages caution regarding persistence and we have therefore assumed that these benefits occur and then disappear within the same year.
- 7.17 We therefore estimate the value of benefits of volunteering – focusing solely on the inputs from the volunteers themselves – to be £3.8m from annual investment of £3.5m, i.e. an estimated Benefit Cost Ratio of 1.1. Since this estimate is based on the Minimum Wage there is no geographical variation.
- 7.18 It would be entirely reasonable to suggest that volunteering can help individuals who are out of work to gain confidence and skills that are valuable in helping them into employment. However, we have not been able to find evidence that isolates the effectiveness of volunteering activity in tackling worklessness from programmes specifically designed to support people into work. If the specific benefits of volunteering could be identified, and there was no risk of double-counting with other strands of regeneration activity, then the valuation of these benefits could be approached using the method presented in the Worklessness, skills and training Activity Category of Theme 1 (Section 4).

Investment in community organisations

- 7.19 Figure 7.4 presents the evidence on unit cost for this activity type, i.e. the cost per net additional social enterprise assist. The quantitative evaluation evidence base specifically relating to social enterprises is very limited. We have drawn on this where possible, but in order to establish a reasonable range on unit costs we have

⁵⁸ Non-wage labour costs refer to employers' social contributions and other labour costs, over and above wages and salaries. Labour Costs Survey data is available from the Office for National Statistics.

enterprises would be somewhat higher, other things being equal, due to the greater business planning challenge associated with social enterprises. However, we also recognise that much of the evaluation evidence on 'mainstream' business support is targeted at high growth private sector companies. Thus, there may well be high unit costs associated with both activities.

7.20 Evidence is available both for support for existing organisations as well as for new start-ups. For support for existing social enterprises, analysis of the available evidence generates a mean unit cost of £13,130 and the range around the mean at the 95% Confidence Interval is from £7,700 to £18,500. For new social enterprise start-up activity, the mean is just over £14,500 per assist within a range determined by the 95% Confidence Interval of £5,100 to just over £24,000. As with mainstream business support, factors influencing the unit cost will be nature and intensity of the support provided, which in turn will depend on the capacity of the social enterprises being supported and the types of activities they are seeking to deliver.

7.21 The Office for the Third Sector has published an analysis of social enterprises on its database which implies that 75 per cent of support for community organisations may be directed at existing social enterprises and 25 per cent directed at start-up activity. In order to illustrate the method, and in the absence of data on how social enterprise support budgets have been allocated, we have assumed that estimated annual public sector expenditure on this regeneration activity of £11m can be apportioned 75/25 between existing social enterprises and new start activity. Figure 7.4 shows how this generates a range on the number of net additional social enterprise assists. The average unit cost estimates are used in the valuation exercise presented below.

Figure 7.4: Investment in community organisations – variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional social enterprise assist (existing organisations)	£7,775	£13,129	£18,483
Public sector cost per net additional social enterprise assist (new start-ups)	£5,115	£14,571	£24,028
Blended public sector cost per net additional social enterprise assist (assuming 75% of expenditure on supporting existing organisations and 25% on new start-up activity)	£6,880	£13,462	£19,615
Net additional social enterprise assists from annual public sector expenditure of £11m on this activity	1,500	800	500

7.22 Figure 7.5 shows how values have been estimated for the benefits from investment in community organisations using additional income generated by these organisations and applying proxy Gross Value Added.

- 7.23 Applying the average unit costs above suggests that an annual investment of £11m, apportioned in the way described above, might support 817 net social enterprise assists overall at the sub-regional level (628 existing social enterprises and 189 new social enterprises created that survive 78 wks+).
- 7.24 Having established the broad number of net assists, we then need to apply evidence on the characteristics of those social enterprises to start the valuation process. This has been done in two steps: (i) estimating turnover effects; (ii) estimating Gross Value Added by applying a Gross Value Added/turnover ratio.

Figure 7.5: Deriving the value of benefits from investing in community organisations		
	Support for existing social enterprises	New social enterprise start-ups
a) Expenditure	£0.011 billion, of which: £0.00825 billion £0.00275 billion	
b) Public sector cost per net social enterprise assist	£13,129	£14,571
c) Net additional social enterprise assists (a/b)	628	189
d) Value per net additional assist	Step 1: £10,500 net additional turnover gain per assist p.a. = Step 2: £4,725 net GVA per assist p.a	Step 1: £34,650 net additional turnover gain per assist p.a. = Step 2: £15,593 net GVA per assist p.a.
e) Value of net additional benefits p.a. (c x d)	£0.003 billion	£0.003 billion
f) Present Value of benefits (assuming build up of 1 year and duration of 3 years)	£0.01 billion	£0.01 billion
g) Benefit Cost Ratio	1.8	
h) BCR based on sensitivity exercise (benefit duration 2 years rather than 3 years)	1.3	

- 7.25 The first step uses turnover as a proxy for the local income generated by social enterprises. The South Yorkshire Social Infrastructure Programme evaluation referred to above allows us to estimate the marginal increase in ‘imported’ income into the local area arising from support. This estimated that around 10 per cent of income was safeguarded as a result of interventions, of which 60 per cent was net additional to the sub-region.
- 7.26 The Social Enterprise Coalition⁵⁹ reports that the Annual Small Business Survey 2005-2007 estimated the turnover of the social enterprise sector to be £24bn pa. Allowing for modest inflation suggests this may be in the region of £25bn in 2009 prices. Taken together with other third sector studies which estimate the number of social enterprises, this suggests a reasonable median baseline turnover of social enterprises of c.£175,000 per annum.

⁵⁹ Social Enterprise Coalition (2009) *State of Social Enterprise Survey*. London: Social Enterprise Coalition.

- 7.27 Based on the South Yorkshire Social Infrastructure Programme evaluation we have applied a 6 per cent net improvement in income/turnover at the sub-regional level as the working assumption on effectiveness of support for existing social enterprises (10% turnover effect of which 60% is assumed to be non-displacing at the sub-regional level). This generates an average turnover effect for existing social enterprises of £10,500 per net assist.
- 7.28 For new starts, we have taken 33 per cent of estimated median social enterprise turnover (£175,000) as the initial annual turnover per new start. Again, it is assumed that 60 per cent of the turnover generated by these new social enterprises will be non-displacing at the sub-regional level. Over time some of these social enterprises will grow (though some may not), but it seems reasonable to start with a cautious estimate for these types of beneficiary. This leads to an estimated average turnover effect of £34,650 per net assist.
- 7.29 We have then converted these turnover effects into Gross Value Added. Drawing on Annual Business Inquiry data, an average ratio of Gross Value Added/turnover of 0.45 has been taken, reflecting the broad range of activities across health and social care, education and 'other service activities'. Applying this ratio to the two turnover estimates suggests that net Gross Value Added benefit per annum per net assist might be in the region of £4,725 for existing social enterprise assists and almost £15,600 for new social enterprise starts. As with the earlier discussion around regional and sectoral variations in Gross Value Added/employee, these average estimates could easily be refined to take on board project-specific characteristics in terms of location and the nature of the services being provided.
- 7.30 Drawing on mainstream business support evaluation evidence we have assumed that these benefits occur over one year and last for three years. Since this does not specifically relate to social enterprises it may overstate or understate the duration for this activity type and this is an area where further research would be useful.
- 7.31 Bringing these estimates together would generate a Present Value of £19.5m from an estimated annual investment of £11m, yielding a Benefit Cost Ratio of 1.8. We undertook a sensitivity exercise which reduced the duration of benefits from three years to two years, leading to a lower Benefit Cost Ratio of 1.3.
- 7.32 Clearly the true value of both the volunteers and community organisations supported rests in the services and projects they deliver. The ideal *alternative* approach would be to trace the benefits accruing to individual beneficiaries and areas by defining specific logic chains and, where the activities are relevant, adopting approaches of the kinds presented elsewhere in this report. However, in the absence of project-specific data of this kind, we believe the application of proxy values for employment costs, turnover and Gross Value Added is a legitimate alternative approach.

Environmental improvement

Overview

- 7.33 The last decade has seen an increasing focus on good design, prompted by the Urban Task Force report (1999)⁶⁰ and a policy agenda on 'liveability' in 2001. Both themes were subsequently developed in the report of the Urban Green Spaces Taskforce⁶¹ which set out the contribution that parks and green spaces can make to quality of life in urban areas and their potential to deliver a range of social, economic and environmental benefits. In 2002 the Office of the Deputy Prime Minister launched its Living Places⁶² initiative which made a number of recommendations that were subsequently reflected in *Sustainable Communities – Delivering Through Planning* (ODPM, 2002) aimed at improving the planning system so that it added more value through design.
- 7.34 These aspirations were embedded in the planning system through new Planning Policy Guidance 17 in 2002 (Open Space, Sport and Recreation) and in the 2004 Sustainable Development Strategy and associated 2005 Planning Policy Statement 1 (Delivering Sustainable Development) and Planning Policy Statement 6 (Planning for Town Centres). At the same time these matters have also been promoted and researched by the Commission for Architecture and the Built Environment.
- 7.35 In addition to its policy and regulatory responsibilities, DCLG has also directly promoted these activities through the regeneration activity delivered by English Partnerships (now the Homes and Communities Agency), the Regional Development Agencies and its direct annual support of Groundwork.

Environmental improvement logic chains

- 7.36 In Objective 1 of the study we defined 8 separate Activity Types within the environmental improvement Activity Category, each of which represents a single logic chain presented in Volume II. These logic chains are: open space; community space; nature reserves; public realm; green routes (footpaths and cycle paths); blue routes (improved river and canal bank access); water quality; air quality.
- 7.37 Primarily the Activity Types relate to either the provision or improvement of local 'environmental infrastructure' or more general aspects of environmental quality in terms of water and air quality. These contribute to improved quality of life or enhanced wellbeing for the beneficiary population(s) and can be classified as both non-market and public goods and services.

⁶⁰ Urban Task Force (1999) *Towards a strong urban renaissance – Final Report of the Urban Task Force*.

⁶¹ DTLR (2002) *Green Spaces, Better Places: Final Report of the Urban Green Spaces Taskforce*. London: Department for Transport, Local Government and the Regions.

⁶² ODPM (2002) *Living Places: Greener, Safer, Cleaner*. London: Office of the Deputy Prime Minister.

- 7.38 Volume II considers the valuation issues across the full range of these activities, but in this report on findings we have focused our attention on these two Activity Types – **open space** and **public realm** - which Section 2 demonstrated are the focus of the majority of regeneration investment in this Activity Category.
- 7.39 The wellbeing outcomes from open space accrue in terms of non-consumptive use benefits, such as (recreation) visits to local parks and amenity value generated by green spaces.
- 7.40 Improvements to public realm will largely enhance wellbeing via perceptions of local amenity and aesthetic quality of areas such as town and city squares, pedestrian streets and promenades. This may also include elements of landscaping in public areas, and public sculptures and art installations.
- 7.41 Section 3 emphasised the importance of economic jurisdiction and this is perhaps of greatest significance in this Activity Category where the objective is to establish the level of benefit accruing to a resident population and ensure that benefits are not over-stated when the values are applied.
- 7.42 In practice, distinctions between different population groups (i.e. determining what constitutes a local resident or a non-resident visitor) are likely to be gradual and in effect there is a continuum that can be represented by increasing distance from the site of interest. Outputs from some activities will be confined to the spatial area in the immediate vicinity of the amenity sites. For others with broader economic jurisdiction, as distance from the site increases, beneficiaries will include both residents and visitors (and possible non-users).
- 7.43 One important factor that determines extent of the economic jurisdiction is the availability of substitutes. For example the economic jurisdiction for improvements to an urban park may be relatively limited if the wider urban area features an abundance of good quality parks. Note also that substitutes do not have to be 'perfect' substitutes; access to open space may imply substitutability between visits to nature reserve sites and parks.
- 7.44 Both Volume II and the Technical Report discuss these issues in greater detail.

How valuation can be approached in this Activity Category

- 7.45 Environmental amenity benefits of the kind delivered through open space and public realm improvements can be suited to valuation via a **revealed preference** approach, specifically hedonic pricing, subject to data availability. In the case of regeneration, hedonic pricing is of particular relevance where property prices are influenced by local amenity aspects such as the availability and quality of parks, green routes and aspects of the public realm.

7.46 The value of enhanced wellbeing arising from non-market goods and services is also widely addressed by the use of **stated preference** methods, such as contingent valuation and choice experiments. They have wider applicability than revealed preference methods, being able to provide valuations for outcomes that are not well represented by property markets or recreation demand behaviour (in the case of travel cost methods).

Preferred valuation approach

7.47 Given the flexibility of the stated preference approach, **we have approached the valuation of benefits of open space and public realm through a stated preference pilot survey which is described in detail in the Technical Report.** Figure 7.6 shows how we have approached the valuation of benefits from open space and public realm.

Figure 7.6: Summary of valuation approaches and data sources – open space and public realm

Activity Types	What principal outputs and outcomes will be valued?	Valuation approach	What data sources are being used to derive regeneration outputs and outcomes?	What data sources are being used to derive values?
Open space Public realm	Net additional hectares of open space or public realm provided	Application of values derived using stated preference techniques – contingent valuation and choice experiments	Range of monitoring and evaluation evidence on unit costs per hectare. All improvements considered wholly additional, since they represent public goods.	Stated preference pilot survey undertaken as part of this research

Applying the evidence

Open space improvements

7.48 In estimating the scale of open space delivery we have applied a unit cost for improvements to open space (i.e. not entirely new open space provision⁶³). Such unit costs are highly project specific and will depend on the baseline condition of the landscape and the nature and extent of site preparation and planting activity. For those involved in project development activity, rates can be sourced from *Spon's External Works and Landscape Price Book*.⁶⁴ For the purposes of illustrative valuation, and following informal discussion with landscape architects, we reviewed evidence from a variety of local authority documents relating to planning obligations which include some useful evidence on the cost per gross hectare of public open space improved.

⁶³ It was decided to focus on improvements to existing open space, rather than new provision, because improvement activity has been a feature of many regeneration projects.

⁶⁴ Langdon, D. (2010) *Spon's External Price and Landscape Price Book*. Spon Press.

7.49 Since the activity represents a public good, private sector investment in the absence of public sector intervention would be negligible for the vast majority of this activity. Therefore for the purposes of the illustration of the method below, additionality is regarded as 100 per cent and thus the cost per gross hectare and cost per net hectare are considered to be the same. As noted elsewhere in this report, for appraisal and evaluation practitioners, the actual level of additionality should be known from project-specific evidence.

7.50 Figure 7.7 shows the range which emerges from our analysis of the evidence, with a mean of £117,700 per net hectare improved within a range of £71,800 to £163,600 per hectare. Taking the mean unit cost, annual expenditure of £103m is estimated to deliver almost 880 net additional hectares of improved open space.

Figure 7.7: Open space - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional hectare of open space improved	£71,812	£117,685	£163,558
Net additional hectares of open space improved from annual public sector expenditure of £103 million on this activity	1,400	880	600

7.51 Figure 7.8 shows how we have applied the results from the pilot stated preference survey to derive the value of the benefits from regeneration investment in improving open space.

Figure 7.8: Deriving the value of benefits from open space improvements	
a) Expenditure	£0.103 billion
b) Public sector cost per net hectare of open space improved	£117,685
c) Net additional hectares of open space (a/b) *	58.5 improvement projects of 15 ha each, amounting to 877 hectares
d) Value per net additional 15-hectare open space improvement project	£256,500
e) Value of net additional benefits p.a. (c x d)	£0.015 billion
f) Present Value of benefits (based on build up over 2 years and duration of 30 years)	£0.281 billion
g) Benefit Cost Ratio	2.7
h) BCR based on sensitivity exercise (benefit duration 15 years rather than 30 years)	1.8

7.52 The stated preference pilot survey provides an illustrative estimate of the value of improvements to open space such as local parks. Estimated willingness to pay is £1.80 per hectare improved per household per year. If we assume that the regeneration investment under consideration led to 877 hectares of improved open space, and if we allow 15 hectares per 'improvement project', then that would represent 58.5 'projects'. A value per project can be calculated by multiplying the unit

willingness to pay value accordingly - i.e. £1.80 x 15 hectares to give £27.00 per project – and then by aggregating that figure over an assumed beneficiary population. If we further assume that the number and characteristics of beneficiaries per project is the same as the stated preference pilot survey (Seaham, population 21,000 or c.9,500 households), then this would generate a value of £256,500 per annum per ‘improvement project’.

- 7.53 It is reasonable to assume that these benefits would take some time to emerge (say two years), but that they would then persist for 30 years. Assuming a constant level of benefit over time⁶⁵ generates a Present Value of benefit of £281m over 30 years leading to a Benefit Cost Ratio of 2.7.
- 7.54 As with the use of the stated preference pilot results to value improvements to visual amenity from restoring derelict properties (Figure 6.6), the above calculation is subject to a number of caveats. These correspond to use of the pilot value in a more general ‘national benefits’ context. As highlighted previously, the main issues concern the assumption of constant unit willingness to pay, how suitable the environmental and socio-economic conditions of the pilot area are of the wider spatial scale over which the unit values are applied, and the assumed size of the beneficiary population for a project.
- 7.55 For the purposes of this study, we undertook a sensitivity exercise which reduced the duration of benefits from 30 years to 15 years. This more cautious assumption leads to a lower Benefit Cost Ratio of 1.8.

Public realm (new provision)

- 7.56 As with open space delivery, we have made an assumption about the unit cost of public realm provision. Once again, these are highly project specific and the range depends not only on scale and content, but also the quality of the materials being used, the extent to which there are features such as public art etc. Costs can easily range from £60/m² to £300/m², i.e. from £600,000 to £3,000,000 per hectare of public realm provided. Bespoke cost data is likely to be available for those appraising and evaluating such projects, and landscape architects will often use reference sources such as Spon’s (op. cit.) when estimating project costs. For the purposes of illustrative valuation, and following informal discussion with landscape architects, we have applied a medium unit cost of £1,500,000 per hectare of public realm provided, which is equivalent to £150/m².

⁶⁵ The level of benefit could decrease or increase through time. Thus, it is possible to envisage a situation at a local scale where open space becomes scarcer (due to development), so the value of maintaining open space increases over time. In practice, we have no empirical evidence as to how benefits may change over time. The current assumption simply assumes that the local environmental improvement will be maintained over time (which is consistent with the stated preference valuation scenario).

7.57 Figure 7.9 sets out this range on unit costs and applies this to estimated annual public sector expenditure on this activity of £288m. Applying the central unit cost estimate suggests this might generate over 190 hectares of new public realm per annum.

Figure 7.9: Public realm - variation in unit costs and potential net additional outputs			
Indicator	Low unit cost	Average unit cost	High unit cost
Public sector cost per net additional hectare of public realm provided	£600,000	£1,500,000	£3,000,000
Net additional hectares of public realm provided from annual public sector expenditure of £288m on this activity	470	190	90

7.58 Figure 7.10 applies the stated preference pilot survey results in a similar way to the open space method above to derive the value of the benefits from regeneration investment in public realm provision.

7.59 The stated preference pilot survey provides an illustrative estimate of the value of improvements to public space such as town squares, pedestrian streets. Estimated willingness to pay is £24.15 per improvement per household per year. If we assume that the average size of a public realm scheme to be in the region of 2 hectares for major town/city schemes, a unit cost of £1.5m per hectare the investment would generate 192 net additional hectares of new public realm provided which would therefore equate to 96 net additional 'improvements'.

Figure 7.10: Deriving the value of benefits from public realm provision – central estimate	
a) Expenditure	£0.287 billion
b) Public sector cost per net hectare of public realm	£1,500,000
c) Net additional hectares of new public realm (a/b)	96 improvement projects of 2 ha each, amounting to 192 hectares
d) Value per net additional 2-hectare public realm project	£229,400
e) Value of net additional benefits p.a. (c x d)	£0.022 billion
f) Present Value of benefits (assuming build up of 2 years and duration of 30 years)	£0.412 billion
g) Benefit Cost Ratio	1.4
h) BCR based on sensitivity exercise (benefit duration 15 years rather than 30 years)	0.9

7.60 As with the open space valuation, a value per improvement project can be calculated by aggregating the unit willingness to pay value over an assumed beneficiary population. If we further assume that the number and characteristics of beneficiaries per project is the same as the stated preference pilot survey (Seaham, population 21,000 or c.9,500 households), then this would generate a value of £229,425 per annum per public realm project. As with the open space activity, we believe it is reasonable to assume that these benefits would take some time to emerge (say two

years), but that they would then persist for 30 years. Assuming a constant level of benefit over that 30 year period generates a Present Value of benefit of £412m with an estimated Benefit Cost Ratio of 1.4.

- 7.61 Caveats associated with this calculation are the same as those highlighted above for improvements to open space. A further point to note is that the value of improvements from the stated preference pilot survey relates to more substantial works – i.e. comprehensive public realm improvements in a location – rather than marginal improvements to existing provisions (as was the case with the pilot results for open space).
- 7.62 For the purposes of this study, we undertook a sensitivity exercise which reduced the duration of benefits from 30 years to 15 years leading to a lower Benefit Cost Ratio of 0.93.
- 7.63 There may well be production benefits from improvements to open space and to public realm – particularly the latter if they stimulate footfall, dwell time and expenditure in (for example) town centre shops and cafés. However, there is little consistent evidence to draw upon to prepare even an illustrative valuation and any such evidence is likely to be highly project-specific.

Neighbourhood renewal

Overview

- 7.64 An important dimension of the regeneration agenda has been the interaction between residents and mainstream service providers to bring about neighbourhood renewal. The broadening of regeneration to become more holistic in its engagement with mainstream service providers began with later rounds of the Single Regeneration Budget and continued through the introduction of the Neighbourhood Renewal Fund and area based initiatives such as New Deal for Communities, Neighbourhood Management Pathfinders and Neighbourhood Wardens from the late 1990s onwards. Such initiatives have worked to bring about lasting improvements to service delivery which will have a positive impact on key outcomes such as crime and anti-social behaviour, ill-health, low levels of educational attainment and poor environmental quality. All of these initiatives have been subject to long-term evaluation by DCLG and provide a useful evidence base on the outcomes associated with neighbourhood-based efforts to challenge and improve mainstream service provision.

Neighbourhood renewal logic chains

- 7.65 Reflecting the wide diversity of activity, the Neighbourhood Renewal Activity Category has 13 Activity Types, each of which represents a single logic chain

presented in Volume II. These logic chains cover four main service areas: crime reduction; health improvement; education; and street and environmental cleanliness.

- 7.66 The theory of change is that regeneration funding can help to stimulate direct or indirect improvements in the frequency, level and/or quality of service to beneficiaries that better meets the needs of residents or priority regeneration areas. Conceptually this approach is reflected in interventions such as the Neighbourhood Management Pathfinders, Total Place and Community Budgets. It is also argued that improving public service delivery increases the attractiveness of an area (possibly supporting more mixed communities) and, critically, that it contributes to enhanced outcomes for existing residents.

How valuation can be approached in this Activity Category

- 7.67 Probably the best technique available with which to assess the monetise the impact of neighbourhood renewal on residents is to use shadow pricing. However, there are only a limited number of examples where shadow pricing has been used to value outcomes. To give two examples, one study⁶⁶ using data for 2003, estimated the value of feeling 'very' or 'fairly' unsafe walking alone in the local area after dark to be approximately £9,400⁶⁷ in household income. Another study finds that an increase in the level of social involvements is worth up to an extra £85,000 per year in per capita household income (Powdthavee, 2008).⁶⁸ A third approach, described in detail below, is the one adopted in the recent National Evaluation of the New Deal for Communities (NDC).⁶⁹ This is the most recent example of the application of the technique at the neighbourhood level in the United Kingdom.

Preferred valuation approach

- 7.68 Because of the diversity of outputs and outcomes generated in this Activity Category bespoke research is required for the individual programmes concerned. New Deal for Communities expenditure accounts for a very large proportion of the neighbourhood renewal expenditure in this Activity Category. Thus, in order to illustrate the broad approach, we have applied the findings from the recent national evaluation of the New Deal for Communities which used shadow pricing techniques to monetise selected outcomes of this Programme.
- 7.69 Figure 7.11 lists derived unit benefits computed using a shadow pricing method devised by the New Deal for Communities evaluation team for a range of outcomes of the Programme.

⁶⁶ Moore, S. (2006) The value of reducing fear: an analysis using the European Social Survey. *Applied Economics*, 38, pp.115– 17.

⁶⁷ The study estimated the value at €13,538 which is approximately £9,400 at 2003 exchange rates

⁶⁸ Powdthavee, N. (2008) Putting a price tag on friends, relatives and neighbours: Using surveys of life satisfaction to value social relationships. *The Journal of Socio-Economics*, 37, pp.1459-1480.

⁶⁹ DCLG (2010) *The New Deal for Communities Programme: Assessing Impact and Value for Money*. London: Department for Communities and Local Government.

7.70 For instance, in the case of a transition from 'not satisfied' to 'satisfied with the area', the expected increase in quality of life produced by this transition is equivalent to an increase in individual income of £59,600. The magnitude of this value represents the large positive influence that feeling satisfied with the local area has on an individual's quality of life. Having such feelings are likely to reflect a wide range of place-related issues, such as safety, the quality and availability of local facilities, and having friendly neighbours, variables which themselves have substantial monetary values. This helps explain why the value of feeling 'very' or 'fairly' satisfied with the local area is so high.

Figure 7.11: Derived unit benefits: shadow pricing

	Unit benefits pa (£)
Education	
Taken part in educ./training in the past year	2,300
Worklessness and finance	
In employment	4,900
Health	
Do no exercise for 20 minutes or more	-15,800
Smoke cigarettes	-5,900
Feel own health not good	-30,600
SF36 mental health index, high score	33,500
Very/fairly satisfied with family doctor/GP	5,400
Crime	
Feel a bit/very unsafe after dark	-6,100
Been a victim of any crime in last year	-9,400
Lawlessness and dereliction index, high score	-9,800
Housing and the physical environment	
Trapped	-12,500
Very/fairly satisfied with area	59,600
Want to move	-23,600
Very/fairly satisfied with accommodation	41,000
Problems with environment index, high score	-5,000
Community	
Feel part of the community a great deal/a fair amount	14,900
Neighbours look out for each other	11,600
Can influence decisions that affect local area	9,000
Source: CRESR Sheffield Hallam University from Ipsos MORI NDC Household Survey	

Applying the evidence

7.71 The adoption of these techniques has thus far been programme-specific, with the benefits reflecting the mix of programme activities and thus the relative priority given to particular outcomes. Therefore there is an inherent difficulty in seeking to transfer such estimates to different contexts. Purely to complete the valuation exercise – but recognising the need for more original research – we have applied the shadow pricing technique discussed above to the estimated annual investment on

neighbourhood renewal of £0.1bn per annum. Since this remains dominated by New Deal for Communities expenditure, we believe the approach has legitimacy in this case, but note the difficulty of such 'benefits transfer' to different programmes in the future.

- 7.72 The evidence from the New Deal for Communities evaluation suggests that the ratio of benefits to costs for that programme is 3.0. Applying this to the estimated annual expenditure on neighbourhood renewal activity (just over £0.1bn per annum) suggests a Present Value of benefits in the region of £0.327bn.

Strengths and weaknesses of the approach adopted

Community development

- 7.73 In the community development arena the ideal would be to seek to measure and value the final outcomes of such activity to its logical conclusion. However, there is currently limited evidence on the outcomes of such activity because community development activities are so multi-faceted and deliver multiple outcomes. The approach adopted, using employment costs and Gross Value Added as a proxy for the time input of volunteers, and turnover and Gross Value Added as a proxy for the activity of social enterprises, is clearly a partial view, but the strength of this approach is that it is relatively easy to understand and apply in different contexts.

Environmental improvement

- 7.74 The strengths of the stated preference approach are that, once robust results are available, they can be applied in a variety of contexts to a range of environmental attributes which are familiar to many regeneration practitioners. The weakness of the approach at the present time is that results above are limited to one observation only which is clearly far from ideal. Further primary survey work is needed, building on the results of the pilot stated preference survey undertaken for this study, which extends the same survey to multiple locations to generate a broader base of valuation evidence. This is discussed in detail in Section 9.

Neighbourhood renewal

- 7.75 The advantage of the shadow pricing technique used for the New Deal for Communities evaluation is that it is able, through extensive primary survey work, to attribute values to a wide range of social outcomes. However, the main difficulties arise when seeking to attribute these benefits to other individual interventions. As noted above, the results above are programme-specific and more research is needed in this area to generate results which are capable of wider application.

8. Bringing it all together

Introduction

- 8.1 The evidence presented in Sections 4, 5, 6 and 7 indicates that it is possible to value the benefits of the majority of the regeneration expenditure identified in Section 2 of this Report. A number of different approaches and techniques have been used but wherever possible we have sought to base the valuation on market information.
- 8.2 In undertaking the research we were concerned to ensure that there was sufficient sensitivity applied to key parameters associated with durability and quality of regeneration benefits. Thus, there is uncertainty about how long a job created will last and its economic worth. In the sensitivity analysis we have adopted alternative, cautious assumptions in relation to earnings and Gross Value Added as well as the duration of benefits to reflect this uncertainty.
- 8.3 As the Report makes clear, the study recommends an approach which involves two main elements. The first of these is to establish the volume of net additional outputs being generated by the subject expenditure. The second step involves assigning a value per net additional output as well as assessing how quickly the benefit will build up and how long it will last for. Combining these two steps enables a Present Value of benefits to be calculated which, when compared with the annual public sector expenditure which generated the outputs, enables a Benefit Cost Ratio to be derived.
- 8.4 In the rest of this chapter we summarise the evidence which has been applied to illustrate the framework and the results that emerge.

Estimating net additional outputs

Variations in unit cost

- 8.5 The volume and type of net additional outputs may already be known directly from appraisal or evaluation work. In this study we began with estimates of regeneration expenditure by activity and assembled available evidence on unit costs by activity in order to illustrate a plausible range on the volume of outputs.
- 8.6 The number of observations on which that unit cost analysis is based is reasonable for some activities (20+ observations) and, in a few cases, highly limited. This reflects the paucity of the evidence base and, as we go on to discuss in Section 9, highlights the need for further, and more focused evaluation evidence to fill key gaps in the knowledge base. However, we are content that the evidence used is

sufficiently robust to demonstrate how the analytical framework can be used across a wide range of regeneration activities.

8.7 Figure 8.1 sets out the range on unit costs by theme and activity type, showing the mean as well a range based on the 95% Confidence Interval. It also summarises the factors which influence the variation in unit costs.

Figure 8.1: Public sector cost per net additional output					
Activity type	Unit cost measure	Low	Average	High	Comment on factors influencing variation
Theme 1: Worklessness, skills and business development					
Tackling worklessness	Public sector cost per net additional positive outcome into employment	£7,353	£13,320	£19,287	Work-readiness of the individuals being targeted and the extent of support required to move them into sustainable employment.
Skills and training	Public sector cost per net skills assist leading to NVQ Level 2+	£5,205	£8,851	£12,497	The subject of training being provided, the NVQ Level of the training and the training delivery method.
General business support	Public sector cost per net additional job	£6,392	£13,309	£20,226	Highly dependent on the nature of the support being offered, from limited advice on marketing or web development through intensive management consultancy activity to capital investment in plant and equipment. The severity of the market failure will dictate how significant public sector investment is relative to private sector commitment.
Start-up and spin-outs	Public sector cost per net additional job	£2,290	£10,661	£19,032	In some ways similar to tackling worklessness – dependent on the start-up readiness of the applicant and their individual skills as much as the specific requirements of the business.
Promotion of business enterprise research & development	Public sector cost per net additional job	£35,492	£57,209	£78,926	Very large range dictated by the innovative nature of much of the activity being supported and the higher expense typically associated with R&D equipment and personnel.
Theme 2: Industrial and commercial property					
Industrial and commercial property	Public sector cost per net additional job	£19,294	£32,312	£48,817	Influenced by property market conditions (thus how much the private sector is willing to contribute and the gap the public sector must meet) linked to the physical condition of the sites and premises and the proposed intervention, where higher sustainability standards can increase costs quite significantly.

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Figure 8.1: Public sector cost per net additional output (continued)					
Activity type	Unit cost measure	Low	Average	High	Comment on factors influencing variation
Theme 3: Homes, communities and environment					
New build	Public sector cost per net additional dwelling	£59,838	£77,427	£95,017	See industrial and commercial property. Geography and property market variation, combined with variations in tenure mix are also likely to be significant factors.
Improving existing housing stock	Public sector cost per net additional dwelling refurbished	£8,812	£17,977	£27,141	The specific nature of the works required, e.g. to bring homes up to Decent Homes standard.
Acquisition, demolition and new build	Public sector cost per net additional dwelling replaced	£96,516	£114,105	£131,695	Highly site/location specific. Abnormal costs are key, but a very significant cost driver is the costs of acquiring properties. This can be very significant, particularly in areas with stronger property markets.
Communities: Volunteering	Public sector cost per net additional volunteer	£304	£944	£1,584	Dependent on the level of intensity of marketing, recruitment, training and other support.
Communities: investing in community organisations (existing enterprises)	Public sector cost per net additional social enterprise assist	£7,775	£13,129	£18,483	As with business support activity, costs will vary depending on the intensity of the support provided, ranging from limited signposting through marketing support to in depth business planning, mentoring and capital investment.
Communities: investing in community organisations (new enterprises)		£5,115	£14,571	£24,028	As with mainstream start-up activity, with community enterprises expected to require more intensive support to reflect the greater challenges associated with business planning.
Environmental: open space improved (ha)	Public sector cost per net additional hectare of open space improved	£71,812	£117,685	£163,558	Highly project specific, with costs likely to be available from project design work. The scale and quality of the works specification in terms of the type and extent of planting or nature of public realm improvements are key cost drivers.
Environmental: new public realm (ha)	Public sector cost per net additional hectare of new public realm provided	£600,000	£1,500,000	£3,000,000	
Neighbourhood renewal	It is not possible to suggest a single unit cost measure given the breadth of this activity	-	-	-	This activity type embraces many different activities, each with their own unit costs and influencing factors.

Applying unit costs to generate net additional outputs

8.8 Having estimated a range on unit cost we then estimated the volume of net additional outputs that were generated from a given level of public sector expenditure. Figure 8.2 estimates the net additional outputs from one year of regeneration expenditure,

based on the low, average and high unit costs presented in Figure 8.1.

Figure 8.2: Estimated net additional outputs from one year of regeneration expenditure				
Activity type	Output measure	Net additional outputs		
		Low unit cost	Average unit cost	High unit cost
Theme 1: Worklessness, skills and business development				
Tackling worklessness	Net additional positive outcomes into employment	47,400	26,200	18,000
Skills and training	Net skills assists leading to NVQ Level 2+	49,700	29,200	20,700
General business support	Net additional jobs	64,900	31,100	20,500
Start-up and spin-outs	Net additional jobs	85,700	18,400	10,300
Business enterprise research & development	Net additional jobs	18,400	11,400	8,200
Theme 2: Industrial and commercial property				
Industrial and commercial property	Net additional jobs	39,400	23,500	15,500
Theme 3: Homes, communities and environment				
New build	Net additional dwellings	88,500	68,300	55,700
	Net additional jobs enabled by new housing	23,300	18,000	14,700
Housing improvement	Net additional dwellings refurbished	115,300	56,500	37,400
Acquisition, demolition and new build	Net additional dwellings (following acquisition and demolition)	1,500	1,200	1,100
Communities: Volunteering	Net additional volunteers	11,500	3,700	2,200
Communities: investing in community organisations	Net additional social enterprise assists	1,500	800	500
Environmental: open space improved (ha)	Net additional hectares of open space improved	1,400	800	600
Environmental: new public realm (ha)	Net additional hectares of new public realm provided	470	190	90
Neighbourhood renewal	It is not possible to suggest a single output measure given the breadth of this activity	N/A	N/A	N/A

Assigning values

- 8.9 The second part of the framework requires a monetary value to be assigned to each net additional output. In most cases this is expressed as a value per annum. Assumptions also need to be applied regarding how quickly the benefits build up, and their duration. Figure 8.3 shows the values that emerged from the techniques and currently available evidence recommended by this study. In Sections 4-7, a set of central valuation assumptions was discussed as well as a sensitivity analysis based on a more cautious view on values and/or duration. Both sets of assumptions are presented in Figure 8.3.

Figure 8.3: Values per net additional output per annum and build up and duration of benefits

Activity Type	Valuation basis	Output measure that values are applied to	Central view			Cautious view		
			Value per net additional output p.a.	Build up (yrs)	Duration (yrs)	Value per net additional output p.a.	Build up (yrs)	Duration (yrs)
Theme 1: Worklessness, skills and business development								
Tackling worklessness	Direct real resource benefits (earnings) plus indirect shadow pricing of crime and health reductions	Positive outcome into employment	£13,814	1	1	£13,814	1	1
Skills and training	Production benefit - GVA uplift arising from skills enhancement	Skills assist leading to NVQ Level 2+	£5,845	1	3	£5,845	1	2
General business support	Production benefit - GVA per employee	Full-time equivalent job (FTE)	£35,000	1	3	£33,000	1	2
Start-up and spin-outs	"	"	£30,000	1	3	£30,000	1	2
Business enterprise research & development	"	"	£35,000	3	3	£33,000	3	2
Theme 2: Industrial and commercial property								
Industrial and commercial property	Production benefit - GVA per employee	Full-time equivalent job (FTE)	£35,000	3	10	£33,000	3	5
Theme 3: Homes, communities and environment								
New build housing	Consumption benefits - betterment in private asset value minus disamenity to society	Dwelling	£29,159	0	1	£29,159	0	1
	Production benefit of employment facilitated by new housing - GVA per net additional dwelling	"	£9,249	3	30	£8,721	3	15
Housing improvement	Consumption benefits - betterment in private asset value minus disamenity to society	Dwelling improved	£2,916	0	1	£2,916	0	1
	Consumption benefits - social benefits of improved housing - not expressed per net output - see Benefit Cost Ratio	-	-	-	-	-	-	-

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Figure 8.3: Values per net additional output per annum and build up and duration of benefits

Activity Type	Valuation basis	Output measure that values are applied to	Central view			Cautious view		
			Value per net additional output p.a.	Build up (yrs)	Duration (yrs)	Value per net additional output p.a.	Build up (yrs)	Duration (yrs)
Theme 3: Homes, communities and environment (continued)								
Acquisition, demolition and new build	Consumption benefits - betterment in private asset value minus disamenity to society	Dwelling	£29,159	0	1	£29,159	0	1
	Consumption benefits - enhanced visual amenity – Willingness to Pay	Per 10 dwellings	£322,050	3	30	£322,050	3	15
Community – Volunteering	Shadow pricing of volunteer inputs - minimum wage	Volunteer	£1,021	0	1	£1,021	0	1
Investing in community organisations	Shadow pricing - social enterprise 'GVA'	Social enterprise assist (existing)	£4,725	1	3	£4,725	1	2
		New social enterprise starts	£15,593	1	3	£15,593	1	2
Environmental: open space	Consumption benefits - Willingness To Pay	Per 15 ha of open space improved	£256,500	2	30	£256,500	2	15
Environmental: public realm	Consumption benefits - Willingness To Pay	Per 2 ha public realm provided	£229,425	2	30	£229,425	2	15
Neighbourhood renewal	Breadth of outputs means cannot be expressed per net output - see Benefit Cost Ratio	-	-	-	-	-	-	-

Benefit Cost Ratios

8.10 Applying the valuation assumptions to the net additional outputs generates a stream of benefits over time that is discounted to a Present Value using HM Treasury's Social Time Preference Rate of 3.5 per cent. The Present Value of benefits can then be divided by the annual public expenditure that generated the benefits to calculate a Benefit Cost Ratio. Figure 8.4 brings together the Benefit Cost Ratios for each of the activities, drawing on the methods and evidence set out in Sections 4 to 7 of this report. The results are based on average unit costs. A lower unit cost would generate more net additional outputs and lead to a higher Benefit Cost Ratio. The opposite would be true of a higher unit cost.

Figure 8.4: Benefit Cost Ratios by Activity Type – central and cautious valuation applied to outputs derived using average unit costs

Activity type	Valuation basis	Central valuation	Cautious valuation
Theme 1: Worklessness, skills and business development			
Tackling worklessness	Consumption benefits (earnings) plus indirect crime and health benefits	1.04	1.04
Skills and training	Production benefit - Earnings uplift arising from skills enhancement	2.2	1.6
General business support	Production benefit - GVA	8.7	6.0
Start-up and spin-outs	"	9.3	6.8
Business enterprise research & development	"	2.5	1.8
Theme 2: Industrial and commercial property			
Industrial and commercial property	Production benefit - GVA	9.96	5.8
Theme 3: Homes, communities and environment			
New build housing	Consumption (property betterment) and production benefits (GVA)	2.6	1.7
Housing improvement	Consumption benefits - property betterment and social benefits	2.0	1.3
Acquisition, demolition and new build	Consumption benefits - property betterment and visual amenity enhancement	5.5	3.7
Communities: Volunteering	Shadow price of volunteer inputs - minimum wage	1.1	1.1
Communities: investing in community organisations	Shadow price of social enterprise 'GVA'	1.8	1.3
Environmental: open space	Consumption benefits - Willingness To Pay	2.7	1.8
Environmental: public realm	Consumption benefits - Willingness To Pay	1.4	0.9
Neighbourhood renewal	Consumption benefits - value transfer from NDC evaluation which adopted shadow pricing approach	3.0	3.0
All Activity Types (real resource)		3.5	2.3

- 8.11 Overall, this study has placed a value on £9.6bn of annual public sector expenditure on regeneration. Based on cautious (rather than central) valuation assumptions, the **overall Benefit Cost Ratio associated with regeneration expenditure is estimated to be 2.3**. This seems entirely plausible given the given the evidence available from primary research and examples cited elsewhere.
- 8.12 It is also the case that the Benefit Cost Ratios will vary by geography. This is because Gross Value Added, earnings and land values vary across England.

Part III

Strengthening the Evidence

9. A future research agenda

Introduction

- 9.1 The overall objective of the research discussed in this Report has been to improve our understanding of how the benefits of regeneration should be valued. It was designed to be an innovative study, which would provide a framework for further work to estimate the benefits of regeneration and pilot approaches to assigning a monetary value to the outcomes of regeneration. It was concerned to identify gaps in knowledge, draw out key lessons learned from the piloting, and identify where future research might usefully be undertaken to progress the agenda.
- 9.2 Overall, the research has been able to place a value on the benefits of over 90 per cent of regeneration expenditure funded by HM Government and in the majority of the regeneration activities it is possible to do this using market based evidence. The research has highlighted the importance of establishing who the beneficiaries are and their characteristics, what the spatial boundaries of the relevant interactions are and ensuring that there are assessments of additionality and of the likely duration of the benefits that arise. Further research in these areas would be beneficial.
- 9.3 In seeking to apply market based data across the thematic areas of worklessness, skills and business development, industrial and commercial property and infrastructure and homes, communities and the environment a number of informed judgements have been required that build on existing research. We have sought to highlight the strengths and weaknesses of the approach adopted under each theme and indicate where more research would be useful.

Strengthening the logic chains

- 9.4 The broad thrust of the approach to valuing benefits that we have adopted considers two main links in the logic chain which describes how expenditure on regeneration and the activities that it creates translates into final impacts in society. Ideally the main emphasis should be on establishing a causal relationship between regeneration and its impacts on labour, product and property markets. As the evidence review in Volume II shows, this is not always possible and it becomes necessary to find ways of attributing value by considering the outputs that regeneration expenditure and activity produces. This has been the approach that has underpinned much of the valuation work that is reported in Sections 4, 5, 6 and 7 of this Report. The approach appears to work well.

- 9.5 The pathways between regeneration activity and the outputs that they create have probably been the most extensively researched in evaluation work to date. However, the links between regeneration activities and their impact on the relevant outcomes are a lot less well researched. An example of this is the link between interventions in the labour market to enhance skills and the impact that they have on worklessness. In Volume II we have presented some preliminary work that was undertaken during the current research to examine some of these. More research is needed to understand the strength of these relationships but it has to be recognised that there are considerable conceptual and measurement problems that have to be overcome.

New valuation research

- 9.6 The research has indicated that there are some streams of benefit that arise from regeneration activity for which market based information is not readily available and it is necessary to develop methodologies and techniques that enable estimates of value to be derived. Perhaps the most obvious example of this is the consumption benefit from enhanced environmental amenity. We have highlighted the approaches used to value these in Section 7. However, there are other areas that should be considered. These include the benefits of community participation and volunteering, the benefits to businesses of agglomeration and other 'wider achievements' that can arise from enhanced access and proximity. These are all areas that require further research.

Valuing indirect effects

- 9.7 We have argued that regeneration activity can provide benefits to society that arise in both direct and indirect ways. As we discussed in Section 4, actions to reduce worklessness provide direct benefits to people that are reflected in labour markets and it is possible to value these. However, there is a significant body of evidence referred to in Volume II that shows that there are also indirect benefits to society associated with more people in work. Some of the most important of these relate to improved health and reduced crime. These indirect effects have been of particular interest in the delivery of neighbourhood renewal and regeneration policy (NDC, 2010). We have argued in Section 3 that these indirect effects should be incorporated in valuing the benefits of regeneration and in Section 4 we have drawn on existing research to place a value on these effects. However, this is an area that would benefit from more research being undertaken across the agencies of HM Government.

Further work on valuation of environmental improvement and amenity

- 9.8 In relation to environmental amenity the current research undertook two pieces of exploratory work to assess the feasibility of the various approaches suggested. The first was based on the idea of contingent valuation and the application of stated preference. The second was based on revealed preference and the application of hedonic pricing.
- 9.9 The objective of the stated preference piloting work was to develop a stated preference questionnaire that could be used to estimate the value of environmental improvements of regeneration schemes. This was based on initial qualitative testing via a small number of focus groups and cognitive interviews that were followed by a pilot survey to test the questionnaire 'in the field'. The approach adopted combined both choice experiment and contingent valuation methods to give a flexible survey instrument capable of valuing local environmental amenity attributes individually and 'packages' of improvements covering multiple attributes.
- 9.10 The objective of the hedonic pricing work was to apply the technique to a major brownfield reclamation project and assess evidence on impact using house price data provided by the Land Registry.
- 9.11 Appraisal practitioners require robust estimates of the value of environmental improvements. Our recommendations as to where future research should go are based on the findings from the pilot work. On balance, the research tended to support the application of the stated preference technique because of its inherent flexibility to be customised to reflect the circumstance of the individual regeneration scheme and identify effect by type of beneficiary. However, there were also clearly advantages from adopting hedonic pricing where it was felt that sufficient time had elapsed for the impact of regeneration to be reflected in house prices and there was sufficient time-series data to establish a 'before regeneration' position. For a future research agenda we recommend the following issues be considered.

Stated Preference

- 9.12 The main requirement is to extend the application of the pilot survey to multiple locations to generate a broader base of valuation evidence. A number of issues arise here:
- **Site selection:** results from stated preference studies are context-specific and transfer of values to new appraisal (or evaluation) contexts requires a sufficiency of evidence to justify that such a transfer is valid. The pilot survey results estimate the value of improved local environmental amenity in Seaham, a small-sized coastal town. Applying Willingness to Pay estimates

from a context such as this to a different regeneration scheme context requires consideration of factors such as the current environmental amenity baseline (i.e. the status quo conditions), the scale of the improvement(s), socio-economic characteristics of the affected population and the availability of substitutes. For example Seaham may be typical of former coalfield towns in the North East, but is likely to be atypical of other types of regeneration area (e.g. industrial and inner city sites in major urban areas). Therefore further work should identify a typology of regeneration areas and typical environmental improvement activities. This would provide the basis for site selection for a full scale survey to be carried out at multiple locations to ensure that a sufficiently broad base of valuation evidence is generated for use in the appraisal and evaluation of schemes.

- **Refining influence of location and distance:** a full scale survey permits fuller investigation of spatial variance in willingness to pay for improved local environmental amenity. The pilot results establish that location is a critical factor in explaining willingness to pay and this is observed to diminish in relation to the 'intensity' of improvement at a spatial scale (i.e. willingness to pay for improvements in Seaham > willingness to pay for improvements spread across East Durham). It would be desirable to specify a stratified sampling strategy to determine how willingness to pay declines from the site of improvements. This would permit investigation of a 'distance-decay' function that would establish the economic jurisdiction for the benefits of regeneration activities that improve local environmental quality and amenity.
- **'New' attributes:** further survey work has the potential to add further local environmental amenity attributes to the analysis. For example, as reported in Section 3, 'nature reserves' was dropped from the pilot to permit for a balanced assignment of attributes to choice experiment blocks. Further choice experiment blocks could be specified to allow the valuation of more attributes which may be relevant in some regeneration areas, but not Seaham (e.g. 'blue routes'). Adding further attributes and blocks does, however, raise questions as to the cognitive demands of the stated preference questionnaire. This would likely mean that respondents would not see all blocks and attributes (e.g. they would be presented with three blocks out of four or five) which consequently adds a complication in testing for part-whole effects and requires larger samples.
- **Sample size:** requirements to administer a full scale survey at multiple sites, control for potential distance decay and potentially accommodate further attributes and choice experiment blocks can entail a significant sample size. The initial step of further work would be to establish the sampling requirements in conjunction with the suggested typology of regeneration areas and typical environmental improvement activities. Each survey

location would require a sufficient sample size to ensure estimation of robust models and willingness to pay results. If controlling for distance-decay at one site it would also be necessary to have sub-samples within the stratified sampling bands for which robust willingness to pay results could be estimated.

- **Non-linearity:** with larger sample sizes it is possible to estimate models that test for non-linearity in willingness to pay for improved environmental amenity in aggregating the marginal willingness to pay estimates from choice experiment. Of interest is potential diminishing marginal willingness to pay, where unit willingness to pay declines as the scale of the improvement increases. This is a fundamental principle of economic theory and not accounting for it in estimating willingness to pay from choice experiment models can lead to significant over-statement of benefit values (see Lanz et al, 2010⁷⁰). Testing for non-linear willingness to pay would add further explanatory insight to testing for part-whole effects.

Hedonic pricing

9.13 In order to apply the hedonic pricing approach in the context of local area initiatives designed to improve the local environment of an area it is necessary to have good quality data on house prices for houses of different types and geo-post coded. The most obvious and accessible source for this data was the Land Registry. However, while the Land Registry was able to provide data from 1995 onwards, it had not previously generated the data in the form required and it was necessary for their software to be adjusted to enable them to do this. Now that this has been done it would be possible to apply the technique to multiple locations. This would enable the exploration of impact in a number of different types of regeneration scheme in areas with quite different characteristics at different points in time. More specifically:

- **Sample sizes:** one of the key issues that appears to have limited the findings of this study is the number of observations for those properties that are most likely to have seen an impact on house prices from the regeneration – i.e. those closest to the site. This suggests that sites chosen for analysis need to have a large amount of residential property nearby, both before and after regeneration.
- **Refining the areas of impact:** the use of distance bands is probably a good first approximation of the likely range of impact of regeneration, but more refined definitions of the areas to be compared (i.e. impact and no impact) could improve the results. This would require local knowledge of each site.

⁷⁰ Lanz, B.A., Provins, A., Bateman, I.J., Scarpa, R., Willis, K.G. and Ozdemiroglu, E. (2010) Investigating willingness to pay - willingness to accept asymmetry in choice experiments. In S. Hess and A. Daly (eds.) *Choice modelling: the state-of-the-art and the state-of-practice: proceedings from the inaugural International Choice Modelling Conference*. Bingley: Emerald Group Publishing.

- **Time period:** it is important that the regeneration of the site took place over such a period as to allow large enough samples of data to be created for the before, during and after periods. The Land Registry data are only available from 1995 onwards, although other sources (e.g. Nationwide or Halifax) may be able to provide longer time series. It should be noted that the Land Registry data does have the advantage of including all property transactions, whereas data from Nationwide, say, would only provide information for houses on which Nationwide provided a mortgage.
- **Housing characteristics:** the Land Registry data do not include much information on housing characteristics. Increasing the number of housing characteristic variables would improve the analysis, because leaving them out of the hedonic function means that variations in price due to these characteristics could be incorrectly attributed to one of the other variables in the function. If it is possible to obtain house price data from Nationwide or Halifax, say, then their data are likely to include such information.
- **Taking into account local amenities:** The scope of the hedonic pricing pilot study did not allow any analysis of whether there were any particular local amenities, or other developments that took place during the period of study, that might also have an impact on prices (and so distort the results). Including such analysis could improve the robustness of the results.

10. Strengthening regeneration appraisal and evaluation practice

Introduction

- 10.1 This study has explored valuation issues and the available evidence and sought to apply it to generate an initial picture of the potential value of regeneration activity. In doing so it has harnessed a wide range of evaluation material as well as other relevant research. As noted earlier, the study has not considered wider matters such as the benefits to the UK as a whole, or the opportunity costs of regeneration activity as opposed to other interventions.
- 10.2 Valuation has slowly, but in the last few years, steadily, moved more towards the centre stage in appraisal and evaluation. The ability of appraisal practitioners to apply evidence on a consistent basis is intrinsically linked to the quality, robustness and format of evaluation and other research evidence. This final section highlights a number of key areas of appraisal and evaluation practice which, if strengthened, could enhance the valuation evidence base and improve decision-making.

The central role of logic chains in appraisal and evaluation

- 10.3 The study has highlighted the important role of logic chains in the valuation process and reinforced the central function that these play at both the appraisal and evaluation stage. There is a continuing desire to express the effectiveness of regeneration interventions through a net impact on outcomes. However, at the present time the causal links and quantitative relationships between outputs and outcomes remain fragile or untested in many areas. Section 9 suggests areas of research which would help to strengthen the evidence base.
- 10.4 This weakness demonstrates the significance of net additional outputs, alongside outcomes, in the valuation process, in ensuring maximum flexibility in the development of new valuation techniques. A key benefit of output-based valuation is its ability to enable a refined valuation process through a better understanding of beneficiary characteristics (e.g. occupation, sector, location). However, this is only possible if evaluations themselves capture data on beneficiary characteristics on a consistent basis.

Providing more practical guidance to appraisal and evaluation practitioners

- 10.5 As noted in Section 1, the Green Book⁷¹ has encouraged the use of valuation and cost benefit analysis for over a decade. There has been no shortage of guidance promoting the approach in general, but there has been a dearth of practical material to support the consistent application of key techniques in common areas of regeneration intervention. It is hoped that this study will go some way towards filling this gap. However, we believe there remains a need for cross-governmental guidance of a practical nature that sets out in clear terms those techniques that are regarded as valid by HM Treasury and key sponsor departments such as the Department for Communities and Local Government (DCLG). The IEF+ guidance recently launched by Department for Business, Innovation and Skills provides a useful starting point. At present this guidance, and the Additionality Guide developed and promoted by the Homes and Communities Agency, are directed at the needs of particular organisations rather than the regeneration sector at large. HM Treasury's online Green Book offers the scope for updated appraisal guidance on valuation that meets the needs of the regeneration sector.

Better co-ordination of evaluation activity to fill key gaps in the evidence

- 10.6 In relation to evaluation, the consistency of quantitative evaluation evidence has improved markedly in recent years and there is now a good understanding of the main additionality adjustments and how these can be measured, helped by guidance such as DCLG's 3Rs guidance and the Homes and Communities Agency's Additionality Guide. The Department for Business, Innovation and Skills IEF+ guidance includes standardised questionnaires and this has the potential to improve the quality and robustness of evaluation evidence relating to business development and skills development interventions in particular.
- 10.7 However, as with appraisal guidance, there remains a need to reinforce the important role of evaluation in filling key gaps in valuation knowledge, as well as deepening the evidence base to provide better evidence of variation by geography and key beneficiary groups. There are important roles for social surveying, both of direct beneficiaries for interventions targeted on individuals and businesses and of residents likely to be affected by place-based interventions. Just as the Department for Business, Innovation and Skills has developed standardised questionnaires for business-focused interventions, which will help to capture key evidence on Gross Value Added impacts, we believe that there is scope for more standardisation of key

⁷¹ HM Treasury (2008) *The Green Book. Appraisal and Evaluation in Central Government*. Treasury Guidance. London: TSO. www.hm-treasury.gov.uk/d/green_book_complete.pdf

questionnaires for evaluations in other themes and Activity Categories, particularly those concerned with tackling worklessness, housing improvements and enhanced open space and public realm.

- 10.8 Social surveying has a crucial role to play in developing the evidence base, but budget pressures may well limit the scope of any one Department or agency to undertake the level of work required to provide estimates capable of disaggregation (e.g. both geographically and by type of activity). To this end we believe there is real scope for co-ordination of valuation-related research activity, particularly between DCLG, the Department for Environment, Food and Rural Affairs, the Department for Business, Innovation and Skills and the Homes and Communities Agency to ensure that what work is commissioned is of a sufficient scale and quality to be capable of widespread application by the sector.

Annex A: Glossary of key terms and techniques

Additionality	An impact arising from an intervention is additional if it would not have occurred in the absence of the intervention.
Affected population	The population of the users and non-users that are affected by the change in the provision of a market or non-market good or service. See also ' <i>economic jurisdiction</i> '.
Altruistic value	Non-use benefit derived from the knowledge that contemporaries are able to enjoy the goods and services related to natural resources.
Appraisal	The process of defining objectives, examining options and weighing up the costs benefits, risks and uncertainties.
Benefits transfer	See ' <i>value transfer</i> '.
Bequest value	Non-use benefit associated with the knowledge that natural resources will be passed on to future generations.
Choice experiment	A form of choice modeling in which respondents are presented with a series of alternatives and asked to choose their most preferred.
Choice modelling	An umbrella term for a variety of stated preference techniques that infer willingness to pay or accept indirectly from responses stated by respondents (as opposed to directly asking as in a contingent valuation survey). Includes choice experiments, contingent ranking, contingent rating and paired comparisons.
Consumer surplus	The difference between price paid and the maximum amount an individual is willing to pay to obtain a good; this reflects the additional benefit that is gained by consumers in consumption of a good or service.
Contingent ranking	A form of choice modelling in which respondents are presented with a number of scenarios and asked to rank them individually on a semantic or numeric scale.
Contingent valuation	A stated preference approach to valuing non-market goods and services where individuals are asked what they are willing to pay (or accept) for a change in provision of a non-market good or service.
Cost Benefit Analysis	A decision-making tool that compares costs and benefits of a proposed policy or project in monetary terms.

Crowding out	The extent to which an increase in demand occasioned by government policy is offset by a decrease in private sector demand.
Deadweight	The proportion of total outputs/outcomes that would have been secured anyway (sometimes referred to as non-additionality).
Direct use value	Economic value associated with use of a resource in either a consumptive manner or non-consumptive manner.
Displacement	The degree to which an increase in productive capacity promoted by government policy is offset by reductions in productive capacity elsewhere.
Distance decay	Pattern of declining unit values for a non-market good or service as distance from it increases.
Economic jurisdiction	The spatial area over which some positive economic value is associated with the use of a resource and the services provided or supported by it.
Economic value	The monetary measure of the wellbeing associated with the change in the provision of some good. For market goods this is ordinarily measured by market price; for non-market goods this ordinarily measured by willingness to pay or willingness to accept.
Externalities (negative and positive)	Externalities occur when an individual's actions or behaviour directly impacts on others' welfare and the individual does not take these spillover effects into account because they are not included in market prices. This leads to overprovision and/or over consumption if they are negative or under provision and/or under consumption if they are positive. Examples of positive externalities include R&D. Examples of negative externalities include air, noise and water pollution; and crime.
Existence value	Non-use value derived from knowing that a resource continues to exist, regardless of use made of it by oneself or others now or in the future.
Evaluation	Retrospective analysis of a project, programme or policy to assess how successful or otherwise it has been, and what lessons can be learnt for the future. The terms 'policy evaluation' and 'post-project evaluation' are often used to describe evaluation in those two areas.
Hedonic pricing method	A revealed preference valuation method that estimates the use value of a non-market good or service by examining the relationship between the non-market good and the demand for some market-priced complementary good (e.g. property or land prices).
Intervention	Project, programme or policy implemented or supported by the public sector to achieve its objectives

Leakage	The proportion of outputs that benefit those outside the intervention's target area or group.
Imperfect competition	Imperfect competition arises when one or more firms have some degree of market power. In the extreme, market structure is characterised by perfect competition and monopoly. In reality though, most markets tend to fall in between these two extremes. The most common example of imperfect competition is the concentration of market power in the hand of a few large providers (i.e. oligopolistic markets). In oligopolistic markets, there may be incentives for firms to restrict production – through deliberate or tacit collusion – thereby leading to a suboptimal level of production from society's viewpoint.
Imperfect information	Imperfect information arises where individuals are not perfectly 'informed' about the options available to them and the costs and consequences of their decision-making. Individuals are therefore unlikely to assess correctly the costs and benefits to themselves of their actions, leading to suboptimal choices.
Market failure	An imperfection in the market mechanism that means that the market has not and cannot deliver an efficient allocation of resources.
Market goods	Goods and services traded in formal markets.
Market price	The value of the provision of goods and services that may be directly observed from markets.
Multiplier effect	Further economic activity (jobs, expenditure or income) associated with additional local income and local supplier purchases.
Non-excludability	The inability to exclude someone from benefiting from a good once it has been provided. The classic example is street lighting, once this has been provided by one agent, all agents can benefit from it. Non-excludability is a defining characteristic of a pure public good.
Non-market goods and services	Goods and services that are not traded in markets and are consequently 'un-priced' (e.g. environmental goods and services).
Non-rivalry	The situation where the usage of a good by one individual does not diminish another individual's ability to consume the good. The classic example is air. Non-rivalry is a defining characteristic of a pure public good.
Non-use value (passive use value)	Economic value not associated with any use of a resource, but derived altruistic, bequest and existence values.

Non-users	Population group(s) that derives economic value from a resource even though they do not make direct or indirect use of it (i.e. non-use value).
Opportunity cost	The value of the next best alternative use of resource.
Outcomes	The eventual effect on economic, social or environmental conditions that an intervention achieves.
Outputs	The physical products or measurable results of projects or programmes.
Political jurisdiction (administrative jurisdiction)	The national, regional or local boundary of the decision-making context.
Present value	A future value (cost or benefit) expressed in present terms by means of discounting.
Primary study (primary valuation)	An economic valuation study specifically designed to estimate the value of the change in a policy good; it provides primary evidence for decision-making, rather than relying on secondary evidence as is the case for value transfer.
Programme	A group of projects and activities that are coordinated and managed as a unit such that they achieve outcomes and realise benefits.
Project	A unique set of coordinated activities with definite starting and finishing points undertaken by an individual or team, to meet specific objectives with defined time, cost and performance parameters.
Public good	'Pure' public goods are said to be non-rival and non-excludable (see definitions above). In practice, most public goods exhibit some degree of non-rivalry and/or non-excludability. In general, these goods are under-provided by the market. Examples are the benefits arising from criminal justice, national defence and clean air.
Shadow price	The opportunity cost to society of participating in some form of economic activity. It is applied in circumstances where actual prices cannot be charged, or where prices do not reflect the true scarcity value of a good.
Stated preference methods	Economic valuation methods that use questionnaire surveys to elicit individuals' preferences (i.e. willingness to pay and/or willingness to accept) for changes in the provision on non-market goods or services.

Substitution	The situation in which a firm substitutes one activity for a similar activity (such as recruiting a different job applicant) to take advantage of government assistance.
Target area	The spatial area within which benefits will be assessed.
Transfer error	The difference between predicted policy site willingness to pay and observed policy site willingness to pay as estimated by studies assessing the accuracy of value transfer.
Use value	The economic value that is derived from using or having potential to use a resource. It is the net sum of direct use values, indirect use values and option values.
Users	Population group(s) that composed of individuals making direct use of a resource or indirect use of a resource.
Value transfer (benefits transfer)	Process by which readily available economic valuation evidence is applied in a new context for which valuation is required.
Willingness to accept compensation	The monetary measure of the value of forgoing a gain in the provision of a good or service or allowing a loss.
Willingness to pay	The monetary measure of the value of obtaining a gain in the provision of good or service or avoiding a loss.

Annex B: Tackling worklessness – fiscal savings

Section 4 set out an approach to valuing the real resource benefits of tackling worklessness. Figure B1 below shows an alternative approach which estimates the **fiscal savings or 'Exchequer benefits'** associated with progression off benefits and into employment and, in the same way as described in Section 4, the indirect benefits generated through improved health and reduced property crime.

Assigning value through the use of fiscal savings is conceptually quite different to that of valuing the real resource gains. However, there may be occasions when HM Government believes it is helpful to do this, particularly where labour markets are very imperfect.

Figure B1: Deriving the value of tackling worklessness activity – Exchequer benefits			
	Direct benefits	Indirect benefits	
	Fiscal savings	Shadow prices: health	Shadow prices: property crime
a) Expenditure	£0.349 billion		
b) Public sector cost per net additional positive outcome into employment	£13,320		
c) Net additional positive outcomes into employment (a/b)	26,200		
d) Value per net additional positive outcome into employment per annum	£6,895*	£513**	£1,522***
e) Value of net additional benefits p.a. (c x d)	£0.181 billion	£0.013 billion	£0.04 billion
f) Present Value of benefits	£0.181 billion	£0.013 billion	£0.04 billion
g) Overall PV of benefits (based on 1 year of benefit)	£0.233		
h) Benefit Cost Ratio (g/a)	0.67		
i) BCR based on sensitivity exercise	N/A – estimates already considered to be at low end of possible range		
<p>* Department for Work and Pensions estimate of net fiscal benefits for average Jobseeker's Allowance claimant into work</p> <p>** applying Department for Work and Pensions guidance on valuing the impact of progression into employment on health for non-Employment and Support Allowance programme participants, inflated to 2009 prices</p> <p>*** applying Department for Work and Pensions guidance on valuing the impact of progression into employment on crime, assuming 50/50 male/female and 33% aged 17-24 and 67% aged 25+</p>			

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