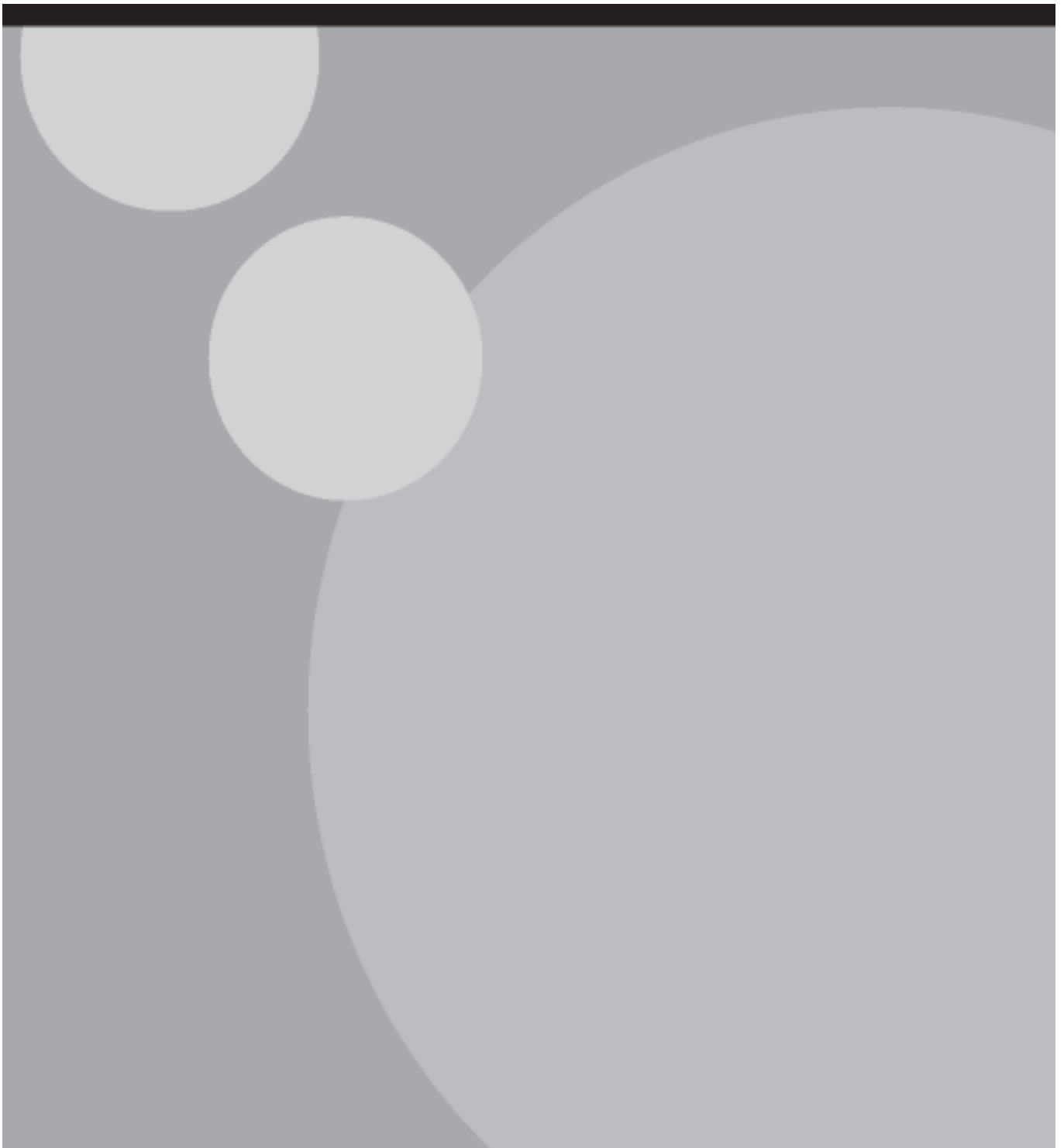


Valuing the Benefits of Regeneration

Economics paper 7: Summary





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Department for Communities and Local Government

This research was commissioned by the previous government.

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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.
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

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

- 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).
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

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

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**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 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

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

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

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 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 the Final 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 of the final report 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 <u>annual</u> 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 final 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 of the report 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	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

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 final 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, Innovations 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.

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