

# Assessing the cumulative economic impacts of health and safety regulations

Scoping study

Prepared by the **Centre for Strategy & Evaluation Services (CSES)**  
for the Health and Safety Executive 2009

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## Scoping study

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The aim of this study was to identify and analyse evidence on the cumulative economic impacts of health and safety regulations.

The study examined two types of cumulative economic effects – the impact of regulations on business performance and, secondly, the wider effects on other groups in society and society overall. The research, which involved a review of about 100 items of original research from the UK, Europe and elsewhere, included several case studies examining the impact of three regulations (COSHH, Asbestos at Work, and Work at Height) on two sectors (Construction and Chemicals).

The focus on the cumulative economic impacts of health and safety regulations distinguishes this study from other studies and the approach of assessing the economic impacts of individual health and safety regulations in isolation from one another. The purpose of the research was to support efforts within the HSE (and elsewhere in the UK Government) to conceptualise and measure the impacts associated with health and safety regulations, in order to deliver improved health and safety outcomes while minimising regulatory burdens.

The study was carried out for the Health and Safety Executive by the Centre for Strategy & Evaluation Services (CSES) in 2008.

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## EXECUTIVE SUMMARY

**The aim of the study was to identify and assess evidence on the cumulative economic impacts of health and safety regulations.** The purpose of the research was to support efforts within the HSE (and elsewhere in the UK Government) to conceptualise and measure the impacts associated with health and safety regulations in order to deliver improved health and safety outcomes while minimising regulatory burdens.

**The study, which was carried out for the Health and Safety Executive by the Centre for Strategy & Evaluation Services (CSES) in 2008, involved wide-ranging research – a literature review, interview programme and case studies.** This includes a review of about 100 items of original research on the economic impact of health and safety regulation in the UK, Europe and elsewhere. A total of 51 interviews were undertaken. This included interviews with HSE staff, officials from Government Departments, trade associations and individual businesses. The empirical research concentrated on examining the impact of three particularly significant health and safety regulations (COSHH, Asbestos at Work, and Work at Height) on two sectors (Construction and Chemicals).

**The focus of the research on the cumulative economic impacts of health and safety regulations distinguishes this study from others and the approach to be found elsewhere of assessing the economic impacts of individual health and safety regulations in isolation from one another.** Furthermore, in much of the existing research, the impact of health and safety on businesses is addressed primarily from the perspective of costs (relating to general sickness absence, employers' liability claims, insurance premiums, accident costs, etc) whereas this study examines wider costs and benefits to not only businesses but also to society as a whole.

**Based on an assessment of existing research, the assignment involved developing a framework for assessment and evaluation of the cumulative economic impacts of health and safety regulations and validating this framework using available evidence.** The study suggests that there are a number of key steps in examining the cumulative economic impacts of health and safety regulations: (1) definition of regulatory objectives, rationale and counterfactual; (2) identification of targeted business process/work activity; (3) assessment of economic impact on businesses including dynamic impact and regulatory interactions; and (4) analysis of wider economic impact on other stakeholders. Impact assessments should include a range of economic impacts including private and social effects, direct and indirect, as well as both intended and unintended effects.

**The final report presents a number of recommendations.** A key suggestion is that there is a need to strengthen linkages between the ex-ante and ex-post stages in assessing the economic impacts of health and safety regulations. Another recommendation is that the focus on business processes in impact assessments and evaluations should be more pronounced. Last but not least, it is argued that additional research should be conducted into the role of regulatory design in influencing the impacts of health and safety regulations.



# EXECUTIVE SUMMARY

## 1. STUDY AIMS AND METHODOLOGY

**1.1 The aim of the study was to identify and assess evidence on the cumulative economic impacts of health and safety regulations.** Based on an assessment of existing research, the assignment involved developing a framework for assessment and evaluation of the cumulative economic impacts of health and safety regulations and validating this framework using available evidence.

**1.2 The study, which was carried out for the Health and Safety Executive by the Centre for Strategy & Evaluation Services (CSES) in 2008, is based on wide-ranging research.** This includes a review of about 100 items of original research on the economic impact of health and safety regulation in the UK, Europe and elsewhere. A total of 51 interviews were undertaken, including with HSE staff and officials from Government Departments, and with some 32 individual businesses. The focus of the empirical research was on the impact on two sectors – Construction and Chemicals - of three particularly significant health and safety regulations (COSHH, Asbestos at work, and Work at Height).

## 2. FRAMEWORK FOR IMPACT ASSESSMENT AND EXISTING RESEARCH

**2.1 The three main groups of stakeholders in health and safety are individuals, employers and society.** The key steps in assessing the impact of health and safety regulations can be summarised as being: (1) definition of regulatory objectives, rationale and counterfactual; (2) identification of targeted business process/work activity; (3) assessment of economic impact on businesses including dynamic impact and regulatory interactions; and (4) analysis of wider economic impact on other stakeholders.

**2.2 Impact assessments should include a range of economic impacts including private and social effects, direct and indirect, as well as both intended and unintended effects.** In relation to these and other types of effects, there is a need to identify the key variables that drive the impacts of different regulations and help to explain why differences in the impacts arise. The extent of regulatory compliance may affect the benefits and costs associated with regulation, with potentially significant distributional consequences.

**2.3 There is a lot of existing research on the economic impacts of health and safety regulations. However, much of this focuses on compliance costs and does not capture the wider effects or different types of impacts, including cumulative and interactive effects.** There is also little in-depth consideration of regulatory interactions or dynamic effects over time in the existing literature.

**2.4 The starting point for an assessment of economic impacts is to map out the intervention rationale and develop relevant counterfactual scenarios.** The primary rationale for government intervention in all policy areas is the existence of a market failure but stakeholders may want the government to take action to bring about or prevent a course of action even when the features of market failure do not apply.

**2.5 Two types of counterfactual are of particular relevance in assessing the impact of health and safety regulations – ‘do nothing’ and alternative versions of the regulatory proposal in question.** Development of a relevant counterfactual helps in an assessment of added value, facilitates the integration of the ex-ante/ex-post stages of the evaluation and appraisal process, and helps identify interactions across regulations.

### 3. ECONOMIC IMPACT ON BUSINESSES

**3.1 In much of the existing research, the impact of health and safety on businesses is addressed primarily from the perspective of costs.** Oft-cited cost concerns relate to general sickness absence, employers' liability claims and insurance premiums. Accident costs per se appear to be a less prominent motivator for health and safety within businesses.

**3.2 The common distinction between direct and indirect costs of health and safety failures is somewhat arbitrary and it is often driven by methodological rather than theoretical concerns.** Instead, this study suggests that the focus on business processes that are affected by regulations should be strengthened to enable a comprehensive assessment of all economic impacts (positive or negative).

**3.3 The organisation of the production process can substantially affect the business impacts of health and safety regulations.** By requiring firms to restructure their production processes, health and safety regulations may generate productivity gains that would not have otherwise been identified and realised. These impacts are likely to differ across sectors and types of firms, and depend on how regulations are designed and implemented.

**3.4 Several studies find that small and medium sized enterprises (SMEs) are affected disproportionately by the costs of health and safety regulation.** For example, SMEs with good health and safety systems tend not to be rewarded through lower insurance premiums. SMEs are also more likely to require external resources to help meet the cost of health and safety related investments. Maintaining high health and safety standards is widely seen as an indicator of good management and there is evidence that this is borne out by better business economic performance.

**3.5 Research has shown that the cost and effect of health and safety regulations are linked to the macro and micro level conditions under which the regulated firm operates.** Changes in the economy over time may affect how and to what extent health and safety regulation impacts on businesses. The incremental costs of health and safety regulation for companies also depend on cost internalisation which can strengthen incentives for companies to prevent health and safety failures even in the absence of regulation.

**3.6 In addition to the business processes that are affected, regulatory impacts also depend to a large extent on the level of response required from the regulated business.** There is evidence that many businesses consider health and safety of strategic importance, though there are differences across sectors and for companies of different sizes. Company age, life cycles and growth experience and expectations also affect how businesses address health and safety. One of the key reasons for non-compliance is the competing demand for management time from other aspects of the business.

**3.7 Regulatory design can have a significant effect on the types of costs that regulated businesses incur, the required compliance behaviour and interactions between regulations.** There is some evidence that regulation and especially self-regulation regimes are particularly challenging for small employers.

### 4. WIDER ECONOMIC IMPACT

**4.1 There is a relative dearth of empirical research and evidence on the cumulative economic impacts of health and safety regulations.** However, existing research indicates that workplace accidents and work-related ill health generate economic costs in terms of impacts on quality of life and health, lost output, and other resource costs to individuals, the exchequer (taxpayers), and to society overall..

**4.2 Existing research has produced estimates of the costs of workplace accidents and work-related ill health at a societal level.** The cost to public health budgets and insurance of work-related injuries and ill health is also reflected in tax bills and productivity losses, which can have implications for economic performance.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

**5.1 There is little in-depth discussion of many aspects of the cumulative economic impacts of regulation in the existing literature.** While there is a large body of literature documenting the impact of health and safety regulation on businesses, the evidence base is less comprehensive for other stakeholders, including individuals and society as a whole.

**5.2 In particular, there is little information on the extent and impact of regulatory interactions, and this is an area where additional research would be very valuable.** Some of the evidence discussed in this study suggests that the potential economic impact of regulatory interactions including overlaps and conflicting requirements might be significant.

**5.3 A key recommendation in the study is that there is a need to strengthen linkages between the ex-ante and ex-post stages in assessing the economic impacts of health and safety regulations.** In addition, there should be significant advantages in strengthening the focus on business processes in impact assessments and evaluations.

5.4 Although already a feature of impact assessments and evaluations, this study highlights the need for empirical inputs that are specific to health and safety. For instance, the appropriateness of Department of Transport figures as a basis for estimates of the economic impact of health and safety outcomes should be reviewed and, if possible, parameters developed that are OSH-specific. Finally, additional research should be conducted into the role of regulatory design in influencing the impacts of health and safety regulations.



# SECTION 1

## INTRODUCTION

### 1.1 STUDY AIMS

**The aim of this study was to identify existing evidence regarding the cumulative economic impacts of health and safety regulations. The objective was to develop a robust analytical framework for assessment and evaluation of the cumulative economic impacts of health and safety regulations, and validate this framework using available evidence in existing research and literature.** The study also included a limited fieldwork programme with stakeholders and businesses. Finally, the report identifies options for future research to further develop evidence and understanding in the area.

**The study focuses on two types of “cumulative” economic impacts of health and safety regulations** - impacts of health and safety regulations on business economic performance and, secondly, wider effects on other groups in society and society overall. The focus on the cumulative economic impacts of health and safety regulations distinguishes this study from the approach of assessing the economic impacts of individual health and safety regulations in isolation.<sup>1</sup> The purpose of the research was to support efforts within the HSE (and elsewhere in the UK Government) to conceptualise and measure the impacts associated with health and safety regulations, in order to deliver improved health and safety outcomes while minimising regulatory burdens.

### 1.2 METHODOLOGICAL APPROACH

The study was carried out in three phases:

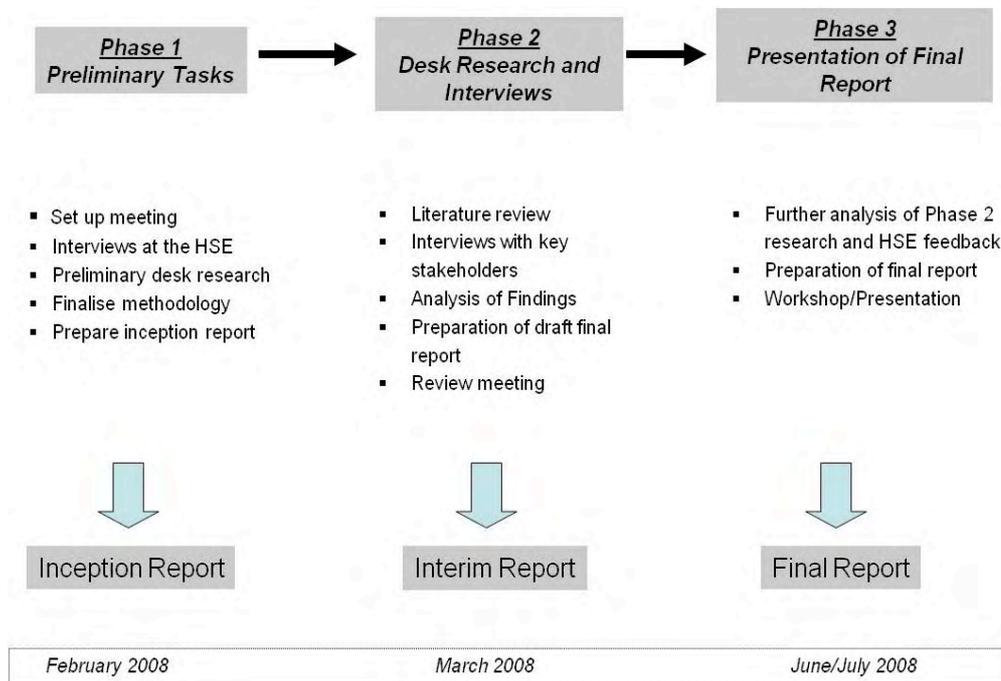
- **Phase 1 – Preliminary Tasks:** a set up meeting, initial interviews at the HSE, preliminary desk research, finalising the methodology and preparation of an inception report
- **Phase 2 – Desk Research and Interviews:** carrying out a literature review and fieldwork interviews with relevant stakeholders, analysis of findings and preparation of a draft report
- **Phase 3 – Presentation of Final Report:** conducting further analysis of interview research and incorporating feedback on the draft report, development of a final report and presentation of the findings at a workshop

Figure 1.1 on the next page shows a summary of the work plan.

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<sup>1</sup> *This report focuses on conventional health and safety regulations, and the economic impacts of major hazards regulations are not a focus of the study.*

**Figure 1.1 Work Plan**



In addition to the chronological presentation above, the study can also be divided into several distinct methodological stages. This is described in more detail below.

### 1.2.1 Literature Review

**The objective of the literature review was to identify existing evidence of the cumulative economic impacts of health and safety regulations, and to develop a robust conceptual assessment and evaluation framework.** The literature review therefore constituted the main part of the study and it informs all sections of this report.

The process of compiling the literature review started with a close review of work that CSES has carried out in the past, including for the European Commission, the Business, Enterprise and Regulatory Reform department (BERR) and the European Occupational Safety and Health Agency. Taking the findings of these reports and the references upon which they were based as a starting point, the search was then widened in order to:

- Update the review of existing literature;
- Extend coverage and focus on developing a methodological framework for this study;
- Include empirical evaluation evidence on the impact of OHS regulations in the UK and elsewhere.

The review was carried out through library searches at the British Library of Political and Economic Science and through various internet searches, including databases of scholarly articles and searches of the HSE website and other similar authorities across Europe.

**In addition to this a limited review was undertaken of relevant literature available in other EU Member States including through contacts suggested by the HSE.** A limited amount of research from the US, Australia and New Zealand are also included. Of course, due to institutional and political differences across countries, findings from other countries cannot

always be directly transposed to the UK and they should be interpreted with care. In as far as possible, and where it is likely that findings cannot be directly projected onto the UK, an effort was made to point out inconsistencies or methodological weaknesses in existing research. Appendix C contains the full list of references consulted for this study.

### 1.2.2 Interview Programme with Stakeholders

**In order to obtain further evidence of the cumulative economic impacts of health and safety regulations on various stakeholders, a number of interviews were carried out with organisations that were identified as being affected by health and safety regulations, and/or that have studied the impact of health and safety regulations.** In addition, the objective of these interviews was to verify some of the quantitative and qualitative information collected through the case studies (described in more detail below) and to inform the interview programme with individual businesses. Interviewees were identified through the literature review and through initial interviews with the HSE.

**Table 1.1: Interview Programme**

Type of Organisation	Number of Interviews
Public Sector	10
Business/Trade Association	9
Individual Companies	32
<b>Total</b>	<b>51</b>

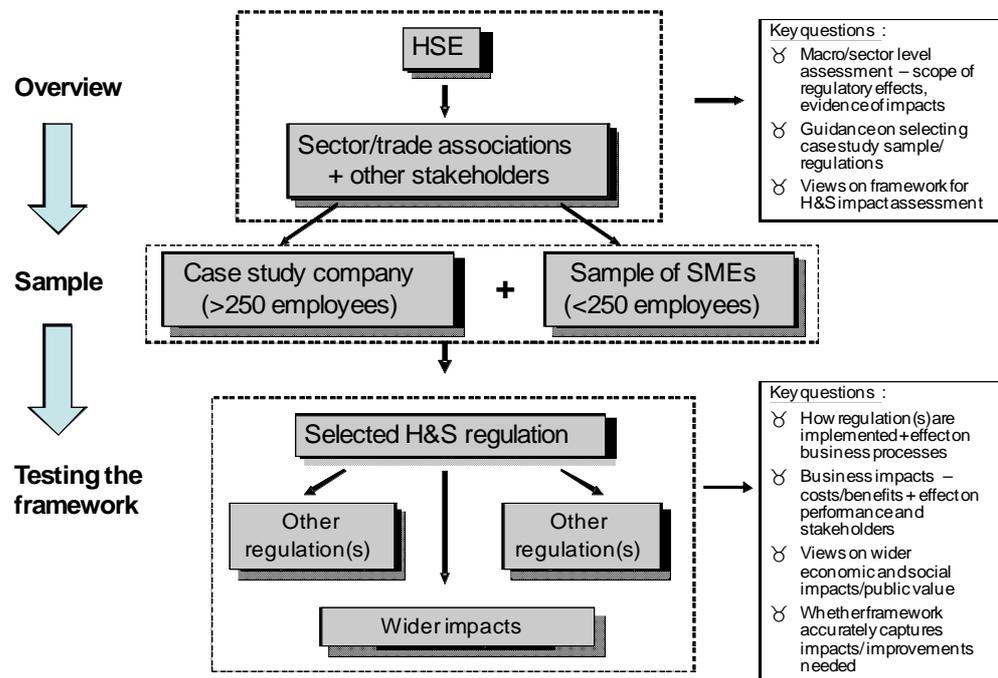
### 1.2.3 Case Studies

**Three regulation case studies were also carried out as part of the study. The objective of the case studies was to obtain a perspective from a limited number of businesses and other stakeholders on the cumulative economic impacts of health and safety regulations.** The case study findings also helped identify practical suggestions and policy recommendations on the way in which regulatory impacts should be evaluated.

**The case studies also allowed initial testing of the feasibility of aggregating from analysis of individual health and safety regulations to the level of cumulative impacts.** It should be noted that these case studies were not intended to provide evaluation evidence for the impact of the specific regulations under consideration.

The overall approach to the case studies is summarised in the following diagram.

**Figure 1.2: Overall Approach to Regulation Case Studies**



Each case study involved approximately five focused interviews with stakeholders including trade associations, cross-sectoral associations, individual businesses, and other relevant organisations. As a starting point for each case study, a representative within the HSE was also interviewed, to provide feedback on the study, and to recommend further interviewees and, where possible, literature.

The case studies focused on particular regulations, selected in consultation with the HSE - Control of Substances Hazardous to Health COSHH (risk assessment), Control of Asbestos at Work Regulations (duty to manage asbestos) and Work at Height Regulations. Appendix D has a more detailed description of these regulations. The focus of the case studies was on how these individual regulations overlap and interact with health and safety regulations more broadly.

Several factors influenced the choice of regulations for the case studies. First, regulations were selected that affect a wide range of business activities. Taking the case of COSHH for instance, companies that *use* hazardous substances in production will need to comply with these regulations in their day to day activities. Companies that *produce* hazardous substances are also affected by these regulations in their outward-focussed business processes such as marketing, sales or product development. In terms of the second dimension of business processes (strategic/operational), the three proposed regulations also offer some interesting variation. Whereas risk assessments as part of COSHH for instance will involve the strategic level of the company (i.e. senior management), safety checks and equipment maintenance as part of the work at height regulations will be carried out primarily by employees as part of their day to day routine.

Second, the three selected regulations have significantly different effects across a wide range of industry sectors. The COSHH and Asbestos regulations have been identified as among the most costly pieces of health and safety regulation in terms of the administrative burdens that they impose. In comparison, the scale of costs imposed by the third case study regulation (Work at Height) is estimated to be only 1% of the total administrative burden of

COSHH. The table below summarises the administrative costs identified in the Administrative Burdens Measurement Exercise for the HSE for the three case study regulations, including their total cost, the percentage of departmental costs and the number of information obligations (IO) that they impose.

**Table 1.2: Administrative Burdens - Case Study Regulations**

Case Study Regulation	Cost (£m) (% of Total)	IO
1. COSHH (risk assessment)	£171.4 (6%)	44
2. Control of Asbestos at Work (Duty to Manage Asbestos)	£121.2 (4%)	27
3. Work at Height	£1.7 (0.5%)	6

*Source: Health and Safety Executive Administrative Burdens Measurement Exercise. Final Report, 2006; Note: IO = information obligation; DR = data requirement*

**Third, given their scope, these regulations are likely to demonstrate a certain amount of overlap and interaction with other regulations, and the effects of these regulations may vary over time.** For instance, many chemicals companies are likely to be affected by both the COSHH risk assessment obligations and the duty to manage asbestos, which also includes a risk assessment obligation. In comparison, there is likely to be less overlap with the Work at Height Regulations which do not target a particular substance but instead focus on an activity or work practice/process. As such, the selection of three case study regulations provides a testing ground for the link between overlapping requirements and the regulatory impact of H&S regulations.

**In addition, the three case study regulations demonstrate dynamic impacts, which is important from the perspective of economic impacts.** While the three proposed case study regulations are relatively recent, the current asbestos regulations (2006) represent a continuation and extension of previously existing legislation. Work at Height regulations came into force in 2005 and COSHH regulations are a result of the transposition of EU Directives in 2002. These different timeframes offer multiple points for learning effects and business process adaptation to occur.

**The focus of the case study research was on two sectors - Chemicals and Construction.** These two sectors are among the primary foci of the HSE's activities and comprise companies that are affected by all three case study regulations. At the same time, these sectors include a wide range of different types of companies. For instance, the Chemicals sector includes both upstream and downstream industries (i.e. companies that produce chemicals as well as those that use them). In the Construction sector, business activities and, as a result the impact of health & safety regulation, also vary widely between builders, painters/decorators and designers for instance.

### 1.3 STRUCTURE OF THE FINAL REPORT

The final report is structured in a way that reflects key issues set out in the terms of reference and in the assessment and evaluation of the cumulative economic impact of health and safety regulations:

- **Section 2 – Background and Previous Research:** examines the policy context and provides an overview of previous research;

- **Section 3 – Framework for Impact Assessment and Evaluation:** sets out key elements in a proposed framework for assessment and evaluation;
- **Section 4 – Economic Impacts on Business:** reviews evidence of the economic impact of health and safety regulations on business;
- **Section 5 – Economic Impacts on Other Stakeholders:** reviews evidence in respect of wider economic impacts.
- **Section 6 – Conclusions and Recommendations:** the final section of the report provides a summary of the main study findings and conclusions, together with recommendation.

The report is supported by two appendices – a list of sources used for the research and information on the case studies.

## SECTION 2

# BACKGROUND AND PREVIOUS RESEARCH

*By way of background, this section summarises the role of the Health & Safety Executive and policy context, and provides an overview of existing research on the impact of health and safety regulations.*

### 2.1 ROLE OF THE HEALTH AND SAFETY EXECUTIVE

**The Health and Safety Executive is responsible for the regulation of a large number of risks to health and safety arising from work activity in Britain.** The HSE's mission is to ensure that risks to people's health and safety from work activities are properly controlled. The Revitalising Health and Safety Strategy aims to help people at work to protect themselves and their business, make work a better place to be and help people decide how to make work safer and healthier.<sup>2</sup> Health and safety regulations affect a wide range of groups in society, including businesses, individual workers, the exchequer (tax payers), and society overall.

**The objectives of Health and Safety interventions in the UK centre on the HSE's overall mission - to protect people's health and safety by ensuring risks in the changing workplace are properly controlled.** In order to fulfil this mission, the body of health and safety interventions address the following three aspects:

- Risk prevention;
- Risk management;
- Enforcement and remedies.

Clearly, in assessing or evaluating the economic impacts of health and safety regulations, it is important to relate individual regulations back to these overall objectives of health and safety policy in the UK. Most regulations cover several or all of these objectives.

**Risk prevention refers to efforts to prevent work-related injuries and ill-health where possible.** Examples of regulations with a risk prevention component include, for instance, exposure limits to hazardous substances or requirements to demonstrate that the use of a ladder for work at height is justified because of low risk, short duration of use or existing features on site which the employer cannot alter<sup>3</sup>.

**Risk management involves raising awareness about hazards in the workplace through obligations such as the risk assessment requirements as part of the Health and Safety at Work Act.** A third strand of activities relates to remedies in case of a breach of health and safety regulations. These include requirements to change work processes found in breach with existing legislation during an inspection, information provided to businesses by inspectors, and investigations in case of accidents or fatalities.

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<sup>2</sup> <http://www.hse.gov.uk/revitalising/>

<sup>3</sup> See *Work at Height Regulations (2005)*, <http://www.opsi.gov.uk/si/si2005/20050735.htm>

**Since 1974, HSE has reduced its legislative stock (all the legislation it is responsible for) by over 55%.** In the early 1990s, and more recently in 2004, reviews led to major reforms of the legislative programme reflecting new priorities and better regulation principles. In recent years the HSC/E have:

- Started to explore alternatives to regulation. For example, the Stress Management Standards, a non-mandatory approach to tackling stress at work launched in November 2004; e-COSHH Essentials, an electronic, risk-based tool for carrying out chemical risk assessments; and in 2006, Workplace Health Connect, a national telephone advice line and expert service;
- Built on the established approach to wide consultation by engaging directly with small and medium-sized enterprises;
- Adopted the Government's policy on the use of Common Commencement Dates;
- Put in place a robust internal policy challenge process, with a strong small business focus.

**In terms of health and safety regulations in the UK, the main piece of legislation is the Health and Safety at Work Act 1974.** The Act sets out the general duties which employers have towards employees and members of the public, and employees have to themselves and to each other. These duties are qualified in the Act by the principle of 'so far as is reasonably practicable'. In other words, an employer does not have to take measures to avoid or reduce the risk if they are technically impossible or if the time, trouble or cost of the measures would be grossly disproportionate to the risk.

**In addition, statutory instruments can amend, repeal, amplify, modify and introduce new aspects of legislation.** The "six pack" of statutory instruments came into force in Britain in 1992. These safety regulations implemented key European directives on workplace health and safety. The Management of Health and Safety at Work Regulations 1999 (SI 1999/3242) (EC Directive 89/391/EEC) generally make more explicit what employers are required to do to manage health and safety under the Health and Safety at Work Act. Like the Act, they apply to every work activity. The main requirement on employers is to carry out a risk assessment. Employers with five or more employees need to record the significant findings of the risk assessment. The remaining five statutory instruments were: Safe Use of Work Equipment, Provision and Use of Work Equipment Regulations 1998 (SI 1998/2306) (EC Directive 89/655/EEC); Manual Handling Operations Regulations 1992 (SI 1992/2793) (EC Directive 90/269/EEC); Workplace (Health, Safety and Welfare) Regulations 1992 (SI 1992/3004) (EC Directive 89/654/EEC); Personal Protective Equipment at Work Regulations 1992 (SI 1992/2966) (EC Directive 89/656/EEC); Health and Safety (Display Screen Equipment) Regulations 1992 (SI 1992/2792) (EC Directive 90/270/EEC).

## **2.2 EUROPEAN AND UK POLICY CONTEXT**

**Regulations that originate at the European level form the basis for most national legislation in the UK.** An overall framework for the European regulations is provided by the Community strategy, of which the latest was announced by the European Commission in February 2007. *Improving quality and productivity at work: Community strategy 2007-2012 on health and safety at work* (COM (2007) 62) aims to achieve an overall 25% reduction of occupational accidents and diseases in the EU. It sets out a series of actions at European and national levels in four main areas, of which one is improving and simplifying existing legislation and enhancing its effectiveness.

**As a result, a large proportion of the administrative burden of health and safety legislation originates in Europe.** The European framework directive 89/391/CEE adopted on 12 June 1989 governs health and safety provisions in the member states. Some variations exist in the transposition of this directive into national law. The primary difference between the European directive and previous health and safety at work provisions lies in its approach to regulation. Whereas previous regulations sought to prescribe particular measures in great detail, the current directive is limited to the definition of certain outcome objectives in the area of health and safety, leaving it up to national authorities and companies to decide on the process that will allow them to achieve those outcomes.

**In the UK, HSE has continued the work of the 2005 UK Presidency in promoting the drive towards better EU regulation.** The HSE has also actively engaged with the Davidson Review, a cross-government review of over-implementation of EU legislation in the UK. The Review was set up to look at how the UK implements European legislation and how this affects the competitiveness of the UK economy. HSE has systems in place to ensure there is no over-implementation of EU requirements. However, in July 2006, the Davidson Review identified an allegation of over-implementation in the application of EU health and safety legislation to the self-employed.

**At a national level, the UK government has set up a specialised institutional framework to promote Better Regulation.** In the area of health and safety, specifically, the Revitalising Health and Safety Strategy aims to help people at work to protect themselves and their business, make work a better place to be and help people decide how to make work safer and healthier.<sup>4</sup> The Department for Business, Enterprise and Regulatory Reform (BERR), has overall responsibility for improving and promoting the competitiveness and productivity of UK business. As part of this remit, it is responsible for taking forward regulatory reforms, particularly where these assist in cutting unnecessary administrative burdens.

**Following changes in 2007, BERR now includes the Better Regulation Executive (BRE), which was previously part of the Cabinet Office.** BRE has helped launch a number of initiatives designed to reduce administrative burdens and produced various publications on Better Regulation / administrative simplification over the past 5 years. The Better Regulation Task Force (BRTF) defines regulation as<sup>5</sup>:

“Any government measure or intervention that seeks to change the behaviour of individuals or groups. It can both give people rights (e.g. equal opportunities), and restrict their behaviour (e.g. compulsory use of seat belts).”

**In 2005, the Better Regulation Task Force published a report entitled ‘Regulation - Less is More: Reducing Burdens, Improving Outcomes’.** This report recommended that the UK government adopt targets for reducing administrative compliance costs faced by business and a “One in, One out” rule for regulation, where new regulations have to be matched by deregulatory measures. According to the BRTF report, this approach would lead to a potential £16 billion increase in GDP for an investment of some £35 million and provide the government with an opportunity to help increase the innovation, productivity and growth of business.

**The Administrative Burdens Measurement Exercise (ABME) was launched by the government in response to the Better Regulation Task Force’s report, ‘Regulation: Less is More’ as part of the Chancellor of the Exchequer’s Better Regulation Action Plan (BRAP).<sup>6</sup>** In total, for all health and safety regulations that place an administrative burden on duty holders, the ABME indicated an annual cost of £2.03 billion following the removal of

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<sup>4</sup> <http://www.hse.gov.uk/revitalising/>

<sup>5</sup> *Principles of Good Regulation, Better Regulation Task Force (BRTF), 2003.*

<sup>6</sup> *Further information is available at <http://www.berr.gov.uk/files/file35995.pdf>*

'business as usual' costs<sup>7</sup> (activities that businesses would do anyway irrespective of legislation). HSC/E have committed to work towards a 25% target reduction in administrative burdens by May 2010. The exercise therefore estimated a required reduction of £508 million if the 25% target is to be met. In reaching this target reduction, HSE will also take into account any additional costs created by new legislation that comes into effect over the period of the plan.

**The ABME identified ten sets of regulations that account for 77% of HSE's total annual costs figure.**<sup>8</sup> To make a significant difference to duty holders as quickly as possible, the HSE's simplification plan has focused on initiatives that:

- Address the highest cost requirements as shown in the ABME;
- Remove/reduce forms requirements;
- Affect the largest numbers of duty holders;
- Address stakeholder proposals where appropriate;
- Can quickly and easily simplify HSE's stock of regulation and guidance.

## 2.3 REGULATORY IMPACT ASSESSMENTS

### SECTION SUMMARY

- Regulatory Impact Assessments have formed an important part of the UK's efforts to promote better regulation.
- In addition to impact assessments in the UK, several initiatives are currently underway to obtain a better understanding of the economic impacts of regulation, including health and safety.

**Regulatory Impact Assessments (RIA) have formed an important part of the UK's efforts to promote better regulation.** They are prepared as part of the policymaking process, to provide an assessment of the costs, benefits and risks of a proposal, including on businesses, the voluntary sector, and other affected groups. They identify and assess a number of options (including a "do nothing" option) for meeting policy objectives, both regulatory and non-regulatory, and determine whether the benefits of the proposed regulation justify the costs. The RIA process has the aim of helping policy makers to think through the consequences of proposals, improving the quality of advice to departments and Ministers and encouraging informed public debate. Since the mid 1990's, all health and safety regulations have, prior to their implementation, been subject to a RIA.

**In November 2007 the scope for impact assessment was extended to all types of interventions and the assessment is now referred to as an "Impact Assessment" (or IA).** These IAs are required to follow the guidance for Impact Assessments that is published by the Better Regulation Executive.<sup>9</sup> Impact Assessments generally cover only one specific regulation or intervention, and examine the costs and benefits as estimated to occur before the regulation is introduced (*ex-ante* costs and benefits). It is expected that regulations should also be evaluated

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<sup>8</sup> <http://www.hse.gov.uk/simplification/abme.htm>

<sup>9</sup> Available at [http://bre.berr.gov.uk/regulation/ria/ia\\_guidance/](http://bre.berr.gov.uk/regulation/ria/ia_guidance/)

*ex-post*, that is after they have been implemented. Most HSE *ex-post* evaluations of regulations have also focused on individual regulations, rather than looking at the cumulative impact of health and safety regulations overall.

**In addition to impact assessments, in the UK (as well as in other European countries) several initiatives are currently underway to obtain a better understanding of the economic impacts of regulation, including health and safety.** In 2006, the Better Regulation Executive published a document on routes to reduction of administrative burdens<sup>10</sup>. The report was intended to raise awareness among policymakers of the consequence of their regulatory decisions for business. The report discusses five ways to minimise the burden of regulation and provides an overview of good practice examples.<sup>11</sup>

## 2.4 REVIEW OF EXISTING RESEARCH AND METHODS

### SECTION SUMMARY

- There is a large body of existing research on the impact of health and safety at work regulations;
- Recent research on the impact of regulation confirms the importance of distinguishing between different types of impacts, in particular those resulting from *cumulative* and *interactive* effects.
- Much of the existing research focuses on compliance costs and does not capture the potential benefits of regulation or different types of impacts including cumulative and interactive effects;

**Overall, there is a wealth of existing research on the impact of health and safety available.** A survey of EU Member States by the European Agency for Safety and Health at Work, published in 1999, indicated that the UK was one of the frontrunners in Europe in terms of policy evaluation.<sup>12</sup> While the situation has developed quite substantially since 1999, with several other Member States rolling out regular impact assessments in the context of national and European efforts at Better Regulation, it is nevertheless the case that the UK has relatively longstanding expertise with impact assessment and policy evaluation techniques across a wide range of policy fields.<sup>13</sup>

**From a methodological perspective, much of the existing research on regulatory impacts across a range of policy fields has a relatively narrow focus on compliance costs or, in some cases, different types of compliance costs.** Most obviously, this is the case for the recent *Administrative Burdens Measurement Exercise* carried out in the UK and in various European countries which focuses on administrative costs but does not include policy costs.<sup>14</sup> Other studies in the UK with a focus on compliance costs more generally include a London Economics study into the impact of safety, health and environmental Regulation on the UK

<sup>10</sup> Available at <http://www.berr.gov.uk/files/file44369.pdf>

<sup>11</sup> These five ways are: (1) remove, reduce, merge or improve regulations (2) Simplify the process to comply with regulations (3) Data-sharing and joined up government (4) Develop ICT-based solutions and services (5) Provide better guidance and information

<sup>12</sup> European Agency for Safety and Health at Work, *Economic Impact of Occupational Safety and Health in the Member States of the European Union, 1999*.

<sup>13</sup> To the extent that we review non-UK research, we have made an effort to alert the reader to potential political or institutional differences that may affect the extent to which the findings can be applied to the UK. Similarly, there are significant differences in the quality of the research that we have reviewed (e.g. in terms of sample size) and, where appropriate, we point this out throughout the text.

<sup>14</sup> Health and Safety Executive, *Administrative Burdens Measurement Exercise, Final Report, July 2006*

industrial coatings, aerosols and specialty chemicals sectors<sup>15</sup> aiming to “estimate the cost of compliance with current SHE [safety, health and environment] regulations in excess of the minimum costs necessary to ensure current levels of protection”. Another example is an HSE commissioned ENTEC study on the costs of compliance with health and safety regulations in SME’s commissioned by the HSE.<sup>16</sup> Outside health and safety, the focus on compliance costs is apparent in a *NERA study* on cost-benefit analysis in financial services and a CSES study for the European Commission (DG Enterprise) on the burden of environmental regulations for SMEs.<sup>17</sup> A Frontier Economics study for the DTI distinguishes between administrative burdens where the main difficulty lies in determining to what extent they are incremental and policy costs which are difficult to quantify “because the affected population is harder to identify and data is [sic] often scarce”. The results of these studies are discussed in greater detail later in this report.

**The advantage of this focus on compliance costs is that it adopts a relatively clear definition of costs to be measured and that it provides a clearly defined business perspective on regulatory compliance.** In addition, companies that are affected by health and safety regulation are likely to have at least a limited understanding of the scale of compliance costs that they incur and they may be able to provide quantitative data to corroborate any qualitative information gathered.

**Within the wider research programme on the costs of (health and safety) regulation, there are large differences not only in the type of costs to be measured but also in the way costs are defined.** For instance, the London Economics study on the chemicals sector focuses on *cumulative compliance costs*.<sup>18</sup> Cumulative costs here refer to the costs of all health and safety regulations at a single point in time. As a result, the study captures the impact of overlaps, contradictions and other regulatory interactions without having to identify these individually.

**A focus on compliance costs fails to capture any of the benefits of the (set of) regulation(s).** It also restricts coverage of both the range of stakeholders affected and the scope of regulatory impacts to the smallest possible number (i.e. the company and compliance costs respectively). As this study shows, these limitations can lead to erroneous estimations of the net impact of a particular regulation or body of regulations because they ignore different types of impacts, some of which may be difficult to quantify, and different types of value generated by the regulatory intervention (e.g. use and non-use value).

### **Cost benefit analysis**

**The main component of most impact assessments is a Cost-Benefit Analysis (CBA).** In a CBA, all relevant costs which accrue from the inputs (human, physical or financial) into a health and/or safety intervention are identified and costed. Likewise, all relevant benefits arising from the intervention are identified and, to the extent possible, expressed in monetary terms. This includes benefits in terms of health and safety outcomes but also non-health and safety benefits that can be counted against costs incurred by the duty holder.

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<sup>15</sup> London Economics, *Evaluating the Impact of Safety, Health and Environmental Regulation on the UK Industrial Coatings, Aerosols and Speciality Chemicals Sectors, Final Report, August 2006.*

<sup>16</sup> Entec UK, *Costs of compliance with health and safety regulations in SMEs, Research Report 174, 2003.*

<sup>17</sup> NERA, *The FSA’s Methodology for Cost-Benefit Analysis, 2004; CSES, Study on the Burden of Environmental Regulations for SMEs, 2007.*

<sup>18</sup> London Economics, *Evaluating the Impact of Safety, Health and Environmental Regulation on the UK Industrial Coatings, Aerosols and Speciality Chemicals Sectors, Final Report, August 2006.*

**Ideally, a cost-benefit analysis includes “as many of the costs and benefits of a proposal as feasible, including items for which the market does not provide a satisfactory measure of economic value”.**<sup>19</sup> The advantages of the cost benefit methodology are two-fold:

- Because of the quantification of costs and benefits, CBA provides a clear method for evaluating the impact of a regulation;
- It provides a simple decision-making rule about whether the intervention should or should not go ahead - an intervention should be pursued if the benefits exceed the costs.

**However, for health and safety, the CBA decision-rule is modified to take into account the particular characteristics of that policy area.** Health and Safety legislation requires that health and safety risks are kept “as low as reasonably practicable” (ALARP). As the HSE guidance on cost-benefit analysis points out, “a CBA cannot form the sole argument of an ALARP decision nor can it be used to undermine existing standards and good practice.”<sup>20</sup> Instead, the decision-making rule in ALARP cases is that “something is reasonably practicable unless its costs are grossly disproportionate to the benefits”. Gross disproportion is measured as the factor by which costs exceed benefits.

**In addition, the HSE issues specific guidance about which costs and benefits must be included and excluded.** A list of relevant costs and benefits as well as a series of good practise examples to guide duty holders in ALARP decisions is also published by the HSE.<sup>21</sup> Nevertheless, as the remainder of this section shows, it is not always clear which costs and benefits should be included and how they should be valued. This report argues that both use and non-use costs and benefits are relevant to health and safety and that they should be valued using a combination of willingness-to-pay and market prices.

**A recent study on evaluating the impact of regulation confirms the importance of distinguishing between different types of impacts, in particular those resulting from cumulative and interactive effects.**<sup>22</sup> Whereas cumulative impacts refer to the effect of a “package” of legislation on the economy, a sector or stakeholders, interactive effects refer to the consequences of overlaps/contradictions between one regulation and others. As the authors point out, there is little evidence in the UK on either the cumulative or interactive impacts of regulation and approaches that consider both the cumulative costs and benefits caused and regulatory interaction require either a general equilibrium model or a limitation to certain “types” of regulations (e.g. fees, standards). Finally, from a methodological point of view it is important to underline that ex-ante impact assessments cannot capture the full range of costs and benefits of (a body of) regulations, particularly because they are not able to fully anticipate and take into account dynamic effects that occur ex-post.

**In an attempt to further formally develop the conventional cost-benefit analysis approach to policy assessment and appraisal in government, the concept of public value has been proposed and considered in related research.** Public value refers to ‘the value created by government through services, laws, regulation and other actions’ (Kelly et al. 2002:4). Within a public value framework, the role of public officials is to create (or maximise) public value given a fixed amount of resources and a set of political and economic constraints. The public value approach emphasises that in assessing and evaluating the impacts of regulations, a wide range of stakeholders and impacts should be incorporated using performance measurement tools that capture value creation across a range of areas<sup>23</sup>.

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<sup>19</sup> *Green Book, Appraisal and Evaluation in Central Government. HM Treasury (2003).*

<sup>20</sup> <http://www.hse.gov.uk/risk/theory/alarpcba.htm>

<sup>21</sup> <http://www.hse.gov.uk/risk/theory/alarpcheck.htm>

<sup>22</sup> *SQW, Evaluating the Impact of Regulation: Developing a Methodology, Final Report to DTI, 2004.*

<sup>23</sup> *The public value approach is further discussed in Annex 1.*

From a methodological point of view, an assessment of costs and benefits depends on the availability of quantitative data from a sample of enterprises because with purely qualitative research, extrapolation to a wider population of enterprises can be difficult. In theory, triangulation (i.e. the use of several methodological approaches in a single study) lends credibility to research findings because it combines the advantages of both qualitative and quantitative research designs. Indeed, most studies reviewed include at least elements of quantitative and qualitative research designs.

## SECTION 3

### FRAMEWORK FOR IMPACT ASSESSMENT AND EVALUATION

#### SECTION 3 SUMMARY

- There is a large body of research on the impact of health and safety.
- Much existing research focuses on compliance costs and does not capture potential benefits of regulation or different types of impacts, including cumulative and interactive effects.
- Cost-Benefit Analysis constitutes the central element in impact assessments though the decision rule is applied more flexibly in policy areas (such as health and safety) where this is considered appropriate.
- The extent of regulatory compliance affects the benefits and costs associated with regulation with potentially significant distributional consequences.
- The impact assessment framework needs to identify the key variables that drive the impacts of different regulations and help explain why differences arise.
- Economic impacts include health and safety “outcomes”, “service” provision and public “trust”.
- Impact assessments should include a range of economic impacts including private and social effects as well as both intended and unintended impacts.
- There is little in-depth discussion of regulatory interactions or dynamic effects over time in the existing literature.
- A systematic analysis of the business processes targeted by a regulatory intervention may facilitate identification of dynamic impacts and regulatory interactions.

### 3.1 OVERALL APPROACH

**The literature reviewed in this study suggests that there are two possible approaches to assessment and evaluation of the cumulative economic impacts of health and safety regulations:**

- **Bottom up** - i.e. to build from assessment and evaluation of individual health and safety regulations, and examine how these overlap and interact with other health and safety regulations, to aggregate to the cumulative economic impacts at the broad level of the body of health and safety regulations;
- **Top down**, i.e. to assess the cumulative economic impacts of health and safety regulations at a macro (economy-wide) level, to consider how the body of health and safety regulations overall impacts on broad measures such as business productivity, labour market outcomes (including employment), and costs of workplace accidents and work-related ill health, at an economy wide level.

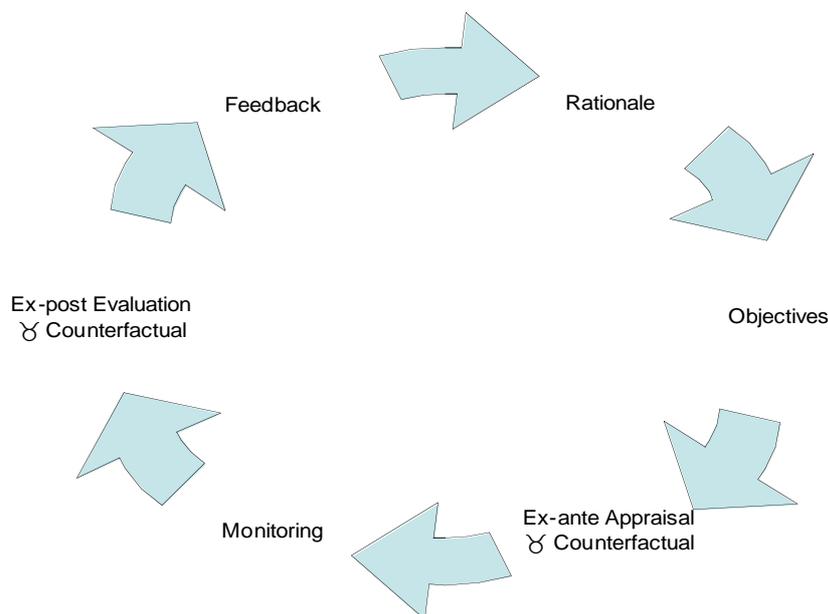
**Both of these approaches are considered in this study with relevant existing evidence and research being identified and assessed.** However, in summary, the advantage of a ‘bottom-up’ approach is that it is easier to identify the impact of specific regulations or combinations of

regulations. However, a drawback is that it is more difficult to identify and assess wider impacts. Whilst this particular difficulty is overcome with a ‘top-down’ approach, this type of methodology cannot tackle attribution so effectively, i.e. establish the relationship between regulation and economic impacts.

**From a different perspective, in assessing the impact of health and safety regulations there is a need to ensure that ex ante and ex post stages are linked.** The Treasury’s Green Book outlines the Appraisal and Evaluation cycle (ROAMEF) which is expected to guide impact assessments and evaluations in the UK. The idea behind the ROAMEF cycle is to ensure that impact assessments, monitoring, and evaluations are conducted in an *integrated* manner to facilitate collection of the best possible feedback on individual regulatory interventions ex-ante and ex-post.

Figure 3.1 summarises the different stages of the ROAMEF cycle as envisaged in the Green Book.

**Figure 3.1: The ROAMEF Cycle**



*Source: Adapted from HMT Green Book*

**Within this overall framework, Figure 3.2 illustrates how an assessment or evaluation of the economic impact of a health and safety regulation might be conceptualised. This framework is discussed in the following section of the report.** The framework builds on the range of existing appraisal and evaluation “best practice” that is currently applied across UK Central Government and in many other countries across Europe and the world. Most notably, in the UK, this includes the HM Treasury’s “Green Book”<sup>24</sup> and the BRE Impact Assessment Guidance<sup>25</sup>.

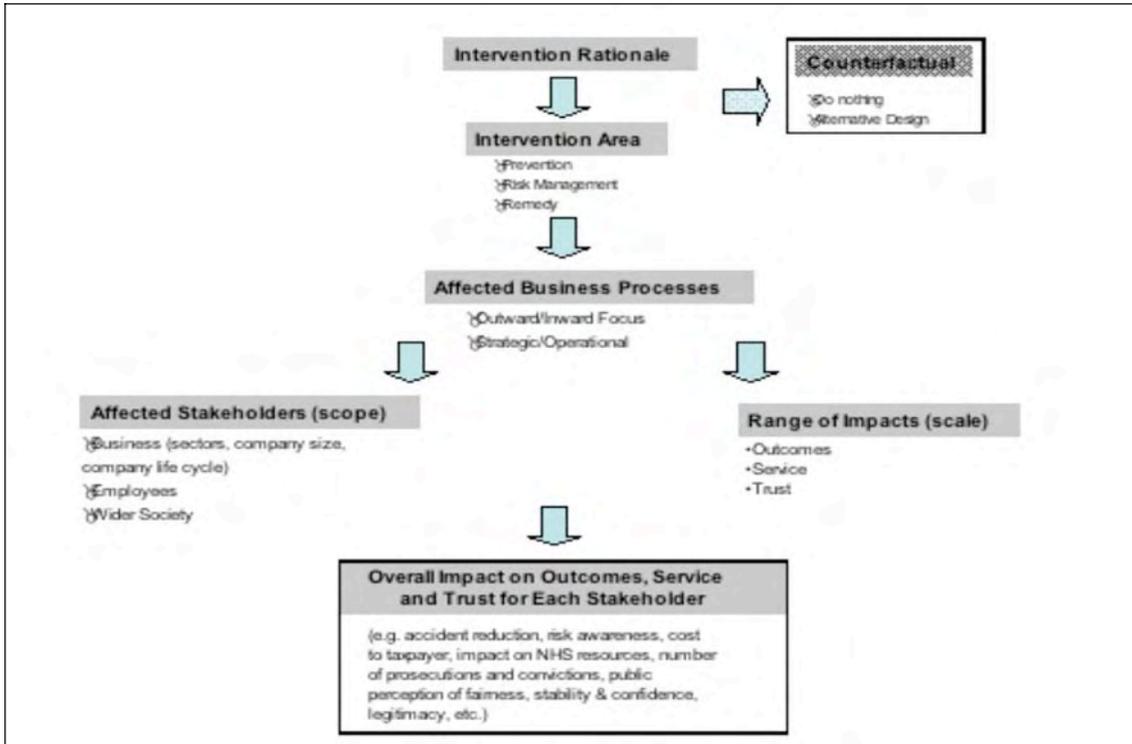
**The framework also takes into account experience with regard to impact assessments and evaluations at an EU level.** This includes guidelines on impact assessment and evaluation

<sup>24</sup> See <http://greenbook.treasury.gov.uk>

<sup>25</sup> <http://www.berr.gov.uk/files/file44544.pdf>

produced by the European Commission, and previous research including studies undertaken by CSES.

**Figure 3.2: Framework for Assessing the Impact of a Health & Safety Intervention**



**Economic impacts in this framework focuses on health and safety outcomes, but also identify impacts on service provision and impact on public trust as measures that may also be included within a public value approach.** For each of these three dimensions, any costs incurred as a result of public intervention need to be set against the use and non-use value that is generated.

### 3.2 INTERVENTION RATIONALE

#### SECTION SUMMARY

- The primary rationale for government intervention in all policy areas is the existence of a market failure but stakeholders may want the government to take action to bring about or prevent a course of action even when the features of market failure do not apply;
- If stakeholders are not willing to pay for a regulation then it is doubtful that the regulation will create significant value. Willingness to pay is already being used in a number of policy areas in the UK, including health and safety and there is some evidence to suggest that employers and individuals are willing to pay for benefits in health and safety outcomes for others;
- While WTP estimates are often used to estimate how individuals value risk reduction to themselves they are less commonly applied to determine the value of risk reduction for others or for society as a whole.

**The primary rationale for government intervention in all policy areas is the existence of a market failure.**<sup>26</sup> Based on the Treasury's economic appraisal and evaluation guidance, market failures, in the context of health and safety, can be identified as including:

- **Information problems**, where individuals and/or businesses do not have good information about risk and its consequences. In the case of health and safety for instance, this may include risks associated with particular technologies or materials. In this situation, the value of government intervention lies in the provision of impartial information and advice that can inform decisions and behaviour and build public trust.<sup>27</sup>
- **Externalities** where individuals and businesses create risks that affect people other than themselves, and that are not taken into account when decisions are taken. Examples include risks to wider society from the use of hazardous substances, such as pollution, disability or the cost of medical treatment. Such externalities reduce the incentive for individuals or businesses to incur potential costs associated with risk reduction because they do not benefit wholly from these measures.
- **Public goods** - the consumption of which is non-rival and non-excludable.<sup>28</sup> Examples of public goods include increases in quality of life within society as a result of a fair, trustworthy and stable body of health and safety regulation. Individuals cannot be excluded from the benefits of a safer working and living environment arising from health and safety improvements carried out by businesses.

**In addition, the Treasury's appraisal guidelines indicate a number of intervention rationales that are not directly linked to market failures.** These include situations where social and physical contexts inhibit effective risk management, the legacy of past decisions that do not address risks appropriately (e.g. asbestos), inequality in risk exposure or involuntary exposure.

**The public value approach identified earlier in this report builds on the market failure justification by recognising that stakeholders may want the government to take action to bring about or prevent a course of action even when the features of market failure do not apply.** In this approach, a rationale for intervention exists when stakeholders are willing to incur an opportunity cost (i.e. to give something up) in return for regulatory action even when the intervention is not itself premised on a market failure.<sup>29</sup> It has been highlighted that this approach recognises an inherently *subjective* – or value based - rationale for intervention.<sup>30</sup>

**The opportunity cost that stakeholders are willing to incur corresponds to the benefit that they expect to derive from the regulation.** In other words, the value to the public of a regulatory intervention is defined by the “price” that they are willing to pay for this regulatory

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<sup>26</sup> See e.g. *Green Book, Appraisal and Evaluation in Central Government. HM Treasury (2003); Managing Risks to the Public: appraisal guidance, HM Treasury (2005)*

<sup>27</sup> *The case studies in this report will further investigate this intervention rationale for three regulations that deal with the use of asbestos, substances that are hazardous to health and risks associated with work at height.*

<sup>28</sup> *Non-rival means that the consumption of the good by one person does not prevent someone else using or consuming that good. Clean air is a good example. Non-excludable means that if a public good is made available to one consumer it is effectively made available to everyone, and can give rise to a problem called free-riding. This is when some consumers fail to pay for the provision of the public good because they expect others will do so. See Annex 1 of the Green Book, <http://greenbook.treasury.gov.uk/annex01.htm>*

<sup>29</sup> *Kelly, Mulgan and Muers illustrate this point with the example of government intervention to prevent a market in body parts even though such a market might be “efficient” from an economic perspective. In UK health and safety, this argument is already implicit in the concept of ALARP (as long as reasonably practicable) which justifies regulatory intervention even in cases where the costs of intervention exceed its benefits. ALARP and gross disproportion are discussed in further detail in the main text.*

<sup>30</sup> *Gavin Kelly, Geoff Mulgan and Stephen Muers ‘Creating Public Value : An analytical framework for public service reform’ Strategy Unit, Cabinet Office, October 2002 [http://www.annual-report.gov.uk/files/pdf/public\\_value2.pdf](http://www.annual-report.gov.uk/files/pdf/public_value2.pdf)*

intervention. Sometimes, these opportunity costs include financial payments (i.e. taxes/charges) which are relatively easy to quantify. Often, stakeholders might also (or only) be willing to make non-monetary sacrifices (e.g. granting inspection and enforcement powers to the state, banning particularly risky choices, etc.). These opportunity costs need to be taken into account in determining the potential value to the public of a particular regulation or regulatory proposal.

### 3.3 DEFINING THE COUNTERFACTUAL

#### SECTION SUMMARY

- Two types of counterfactual are likely to be of particular relevance – ‘do nothing’ and alternative versions of the regulatory proposal under study;
- Development of a relevant counterfactual should facilitate integration of the ex-ante/ex-post stages of the evaluation and appraisal process and help identify interactions across regulations

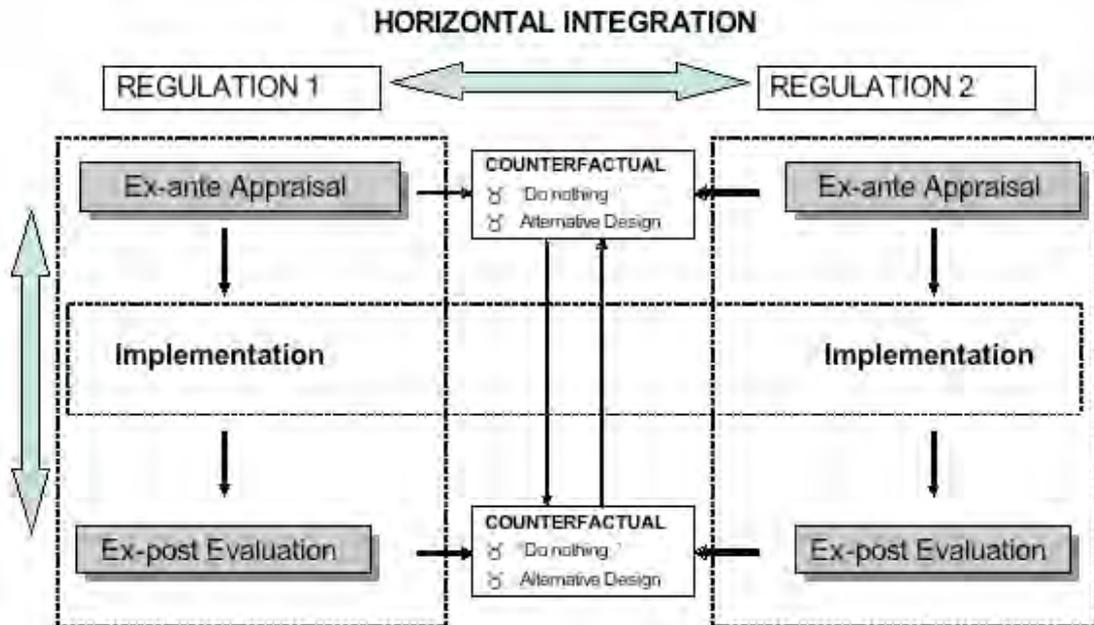
**Once the intervention rationale has been established, it is necessary to determine the baseline against which the regulation under study should be evaluated.** This is important so that the assessment focuses on the *incremental impact* of the regulation without including effects that would have occurred irrespective of the regulation under study.

**Two types of counterfactual are likely to be of particular relevance – ‘do nothing’ and alternative versions of the regulatory proposal under study.** The “do nothing” scenario is particularly important because it establishes the baseline against which incremental impacts of proposed regulations should be assessed. In an ex-ante assessment, the “do nothing” option is a projection of the regulatory status quo into the future. In an ex-post assessment, the “do nothing” option requires removing the impact of the regulation(s) of interest from the analysis. This type of counterfactual is also helpful in determining the validity of a particular intervention rationale. If removal of regulations that respond to a particular rationale (e.g. a type of externality, or a non-market failure rationale such as “equity”) leads to an improvement in outcomes, this would constitute powerful evidence for re-examining the underlying intervention rationale.

**The second type of counterfactual is used to compare different regulatory options.** For instance, it may be of interest to examine the overall value of different regulatory proposals that respond to the same intervention rationale or the costs and benefits for different stakeholder groups under a variety of regulatory design scenarios. For example, in risk prevention, this type of counterfactual could provide valuable information on differences in the impact of HSE guidance and advice relating to work at height versus imposition of safety checks, training and inspection. This type of counterfactual assumes that the underlying intervention rationale is sound and it examines the incremental impact of various regulatory proposals for addressing this rationale. Similarly, in some circumstances it may be interesting to examine the effect of binding regulation in a particular area versus self-regulation, such as codes of conduct and voluntary schemes.

**As the ROAMEF cycle discussed earlier in the report indicates, the development of a relevant counterfactual needs to be seen in the wider context of an integrated impact assessment and evaluation process.** Figure 3.3 below shows potential links between counterfactuals developed at different stages of the evaluation/appraisal cycle and between counterfactuals developed at the same stage of the ROAMEF cycle but for different regulatory interventions.

**Figure 3.3: Horizontal and Vertical Integration in Impact Assessments**



In this figure, **vertical integration** refers to the link between counterfactuals developed for regulations at the *ex-ante* appraisal and the *ex-post* evaluation stages. Such vertical integration is of crucial importance to capturing any dynamic impacts of the regulation that may have occurred over time, such as learning effects among regulated businesses or other stakeholders and other behavioural impacts.

**Horizontal integration** refers to the links between counterfactuals developed at the same stage across different regulations. Integrating procedures for developing counterfactuals across regulations both at the *ex-post* and *ex-ante* stages, facilitates identification and analysis of regulatory interactions. If significant interactive and/or dynamic effects are present, it is necessary to take those interactions into account.

### 3.4 TYPOLOGY OF ECONOMIC IMPACTS

#### SECTION SUMMARY

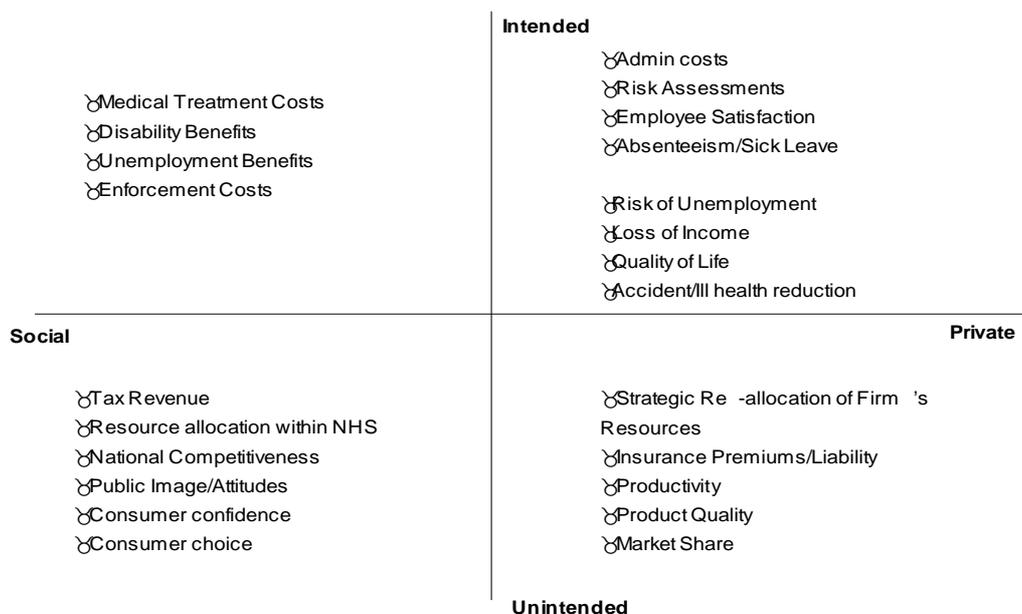
- Impact assessments should include a range of economic impacts including private and social effects as well as both intended and unintended impacts;
- In addition, there is a need to take into account regulatory interactions and dynamic effects, preferably over time. There is little in-depth consideration of these factors in the existing literature;
- A systematic analysis of the business processes targeted by a regulatory intervention facilitates identification of dynamic impacts and regulatory interactions.

**At any particular point in time, three different types of economic effects of health and safety regulations can be distinguished:**

- **Private effects** accrue to businesses or individuals that have directly incurred costs of complying with regulations (for example, by changing work processes and practices) and are not shared with the rest of society. Examples include the direct business benefits arising from lower rates of sickness absence and employee turnover, and the business benefits of increased productivity from a reduction in the number of accidents and occurrence of ill-health.
- **Social effects** are shared between groups and individuals across society. Often, these effects accrue to society as a whole and they include a reduction in the cost of treating conditions due to work in a dangerous and unhealthy workplace. They also include some of the non-use values of health and safety interventions, such as stability and public confidence, accountability and trust in the regulatory system and a perception of fairness in employment relations.
- **Intended/unintended effects** - among private and social effects, a further distinction can be made between intended economic effects of health & safety legislation which emanate immediately from the objectives of the legislation, and the “unintended consequences” of health and safety regulation. Unintended consequences may include reallocations of resources between business processes within individual firms (private) or on consumer choice (social).

Figure 3.4 illustrates how these different types of economic effects relate to each other and provides some examples to illustrate the distinction. In practice, the distinction between private and social effects may not always be very clear. For example, business benefits of improved productivity are likely to be, to some extent, passed to employees (in the form of higher wages) and consumers (in the form of lower prices).

**Figure 3.4: Economic Impacts of Health and Safety Regulations**



**Overall, the evidence reviewed in this study indicates that, conceptually, a wide range of potential measures of intermediate and final outcomes of business economic performance might be affected by health and safety regulations.** These include innovation, productivity, and profitability. In terms of a positive relationship between health and safety regulations and business economic performances, these could play out through the following impacts, according to the World Health Organisation:<sup>31</sup>

- Increase in health of employees, who in turn are more productive and can produce at a higher quality.
- Lower incidence of work-related illnesses leads to less sick leave. In turn this results in lower costs of sickness absence and less disruption of business production processes.
- Equipment and a working environment that is optimised to the needs of the working process lead to higher productivity, better quality and less health and safety risks.
- Reduction of injuries and illnesses means less damages and lower risks for liabilities.

However, as the report notes, “though there is a general conceptual relation between OHS on the one hand and economic performance on the other, the actual quantitative and qualitative relationship is sometimes difficult to discern.” Because the benefits are difficult to measure, it is possible that they are often underestimated.

**At the same time, it is possible that health and safety regulations may also, at least in theory, have a negative impact on business economic performance.** For example, business resources, including expenditure and employee time, that are allocated to complying with health and safety regulations may be diverted from other business activities and investment that would have a higher financial return to the business affected. In the context of regulation more generally, it has been argued that regulation “reduces the rewards of business ownership, disincentivises market entry, investment, innovation and business growth, all of which leads to a sub-optimal level of economic activity from which businesses, workers and consumers suffer<sup>32</sup>” – particularly where effects are concerned. More generally, regulations could affect the allocation of scarce company resources -- financial but also management time – across different business processes, with significant implications for productivity and competitiveness.

**Apart from business impacts, health and safety regulations may be expected to generate costs and benefits to a wide range of other groups in society, and this may account for a considerable proportion of their impact.** This may be expected to be, in particular, via influencing the incidence of workplace injuries and work-related ill health, which generally is the primary objective of health and safety regulations. Workplace injuries and work-related ill health generate costs for businesses, but also for individuals (for example, via unemployment and loss of income), the exchequer (tax payers) and society as a whole (for example, medical resource costs, costs of benefits payments, and lost tax revenue). Some research, discussed in further detail later in this report, has indicated that the majority of the costs of workplace injuries and work-related ill health are placed on groups other than businesses. Health and safety regulations may influence these costs to the extent that they influence the incidence of workplace accidents and work-related ill health.

**In summary, the economic impacts of health and safety regulations are varied and complex and it is necessary to reach beyond simplistic models of measuring the interrelationship.** As noted by the study carried out by the Small Business Research Centre at

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<sup>31</sup> World Health Organisation, *Understanding and Performing Economic Assessments at the Company Level*, 2002.

<sup>32</sup> *Regulation and Small Firm Performance and Growth: A Review of the Literature*. Small Business Research Centre, Kingston University. January 2005.

Kingston University, it is necessary “to develop methodological approaches that tell us *how* regulation generates changes in owner-manager behaviour and wider effects, good and bad”.

### 3.5 WILLINGNESS TO PAY AND OTHER VALUATION TECHNIQUES

#### SECTION SUMMARY

- If stakeholders are not willing to pay for a regulation (or if they are willing to pay only very little) then it is doubtful that the regulation will create significant value.
- Willingness to pay is already being used in a number of policy areas in the UK, including health and safety.
- Other valuation techniques are also used to estimate the potential health and safety benefits of a regulatory intervention.

**If stakeholders are not willing to pay for a regulation (or if they are willing to pay only very little) then it is doubtful that the regulation will create significant value.** For instance, in an assessment of different regulatory proposals, some proposals might impose costs greater than the maximum amount that stakeholders overall are willing to give up in return for the regulatory intervention. In this case, these options should not be chosen because they would not, on the whole, create value (government failure).

**Willingness to pay is already being used in a number of policy areas in the UK, including health and safety.** This is especially the case for quantifying how individuals value a reduction of risks to themselves. For instance, the Value of a Prevented Fatality (VPF) based on willingness to pay (WTP) describes the rate at which people are willing to trade off wealth against risk ‘at the margin’ (i.e. with very small variations in wealth and risk).<sup>33</sup> In the UK, VPF estimates are produced by the Department for Transport (DfT) to estimate the value of avoided road deaths. The HSE uses DfT VPF figures to estimate “human costs” in its impact assessments. Human costs include the cost of “pain, grief and suffering to the casualty, relatives and friends, and, for fatal casualties, the intrinsic loss of enjoyment of life over and above the consumption of goods and services”.<sup>34</sup> The methodology for these estimates based on the concept of willingness to pay and their application to health and safety is described in a 1999 HSE publication on the “Costs to Britain of Workplace Accidents and Work-related Ill Health”.<sup>35</sup>

**An HSE-commissioned study on the true costs of occupational asthma shows how a methodology based on willingness to pay for assessing the costs and benefits of a health and safety regulation might be operationalised in the assessment or evaluation of health and safety regulations.**<sup>36</sup> The study uses a WTP estimate for human costs (grief, suffering, pain) incurred by victims of occupational asthma in conjunction with other cost estimates that are not based on WTP. Table 3.1 summarises the types of costs and stakeholders that the study considers.

<sup>33</sup> It should be made clear that VPF is not the value of life as such. Indeed, most people would probably bankrupt themselves to stay alive. Instead, VPF is a risk-weighted concept, based on the idea that a decrease in risk is valued before the negative incident occurs.

<sup>34</sup> See <http://www.hse.gov.uk/economics/eauappraisal.htm>

<sup>35</sup> Davies et al (1999) *Costs to Britain of Workplace Accidents and Work-related Ill Health in 1995/96*, HSE Books.

<sup>36</sup> Metroeconomica Limited, Institute of Occupational Medicine & University of Aberdeen, *The true cost of occupational asthma in Great Britain*, HSE Research Report 474, 2006.

**Table 3.1: Costs and Stakeholders considered in the Study on the True Costs of Occupational Asthma**

	Description of Cost	Stakeholder	
Indirect Costs	Willingness to pay human costs	Victim	Friends/family
	Value of foregone productive time	Victim	Taxpayer
	Value of foregone leisure time	Victim	-
Direct Costs	Medical resource utilisation	Victim	Taxpayer
	Non-medical resource utilisation	Victim	Taxpayer

Source: adapted from Metroeconomica Limited, Institute of Occupational Medicine, University of Aberdeen, "The true cost of occupational asthma in Great Britain, HSE Research Report 474, 2006.

**Other valuation techniques are also used to estimate the potential health and safety benefits of a regulatory intervention.** Value of a Preventable Fatality figures from the Department for Transport are sometimes weighted to reflect aversion to different types of death. For instance, in the past the HSE has doubled the VPF to take account of individual aversion to dying from cancer in the context of, for example, estimating the benefits of reducing exposure to asbestos, although it is not clear what evidence supports this approach. Estimates of "lost output" and "resource costs" are based on actual market prices, and are not based on willingness-to-pay. QALYs (Quality of Life Adjusted Years) and DALYs (Disability Adjusted Life Years) are not based on willingness to pay though they can also be applied to estimate regulatory benefits from the perspective of the preferences of individuals affected by a regulation. QALYs are the principle measure used by the Department of Health for evaluation of the health benefits of interventions. QALYs take into account life expectancy and also effects on quality of life, and allow the impact on both number of life years and quality of life to be expressed in a single measure.

A disadvantage of QALYs/DALYs is that they cannot be aggregated with other gains because they are not usually monetised in terms of willingness to pay and, therefore, cannot be used to compare the relative merits of regulatory interventions in areas where health benefits might account for a different share of the regulation's overall value. There are also difficulties with estimating the preference weights that are required for calculation of QALYs.

**Nevertheless, QALYs have been used as an alternative to the VPF in HSE impact assessments and they are a commonly used estimate of health benefits across Europe.** A project is currently being undertaken by the Department of Health to examine the feasibility of estimating the monetary value that individuals attach to a QALY, for use in assessment of Department of Health interventions. A related project, led by HM Treasury, is currently investigating the possibility of developing a consistent methodology for valuing benefits to health and life, for application across government departments and agencies.

Table 3.2 below indicates the 2005 economic appraisal values used by the HSE in its impact assessments, including WTP based Human Costs and estimates for lost output and resource costs that are not based on willingness to pay.

**Table 3.2: 2006 Economic Appraisal Values (£)**

	Human Cost	Lost Output	Resource Costs	Total
<b>Fatality</b>	£991,200	£520,700	£900	<b>£1,500,000</b>
<b>Major injury</b>	£18,400	£16,200	£5,800	<b>£40,500</b>
<b>Other reportable injury</b>	£ 2,700	£2,600	£500	<b>£5,800</b>
<b>Minor injury</b>	£200	£100	£50	<b>£350</b>
<b>Av. case of ill health</b>	£5,800	£2,300	£800	<b>£8,900</b>

Source: HSE website

**While WTP estimates are often used to estimate how individuals value risk reduction to themselves they are less commonly applied to determine the value of risk reduction for others or for society as a whole.** Quantitative estimates of such altruistic willingness to pay are particularly difficult to construct because respondents may not reveal their true preferences.

**There is some evidence to suggest that employers and individuals are willing to pay for benefits in health and safety outcomes for others.** For example, it has been reported that the vast majority of employers feel they have “a duty to protect their employees”<sup>37</sup>. Similarly, HSE research has found that moral duty (in combination with commercial considerations) drives health and safety policy within companies.<sup>38</sup> An Ipsos/Mori poll of business owners confirms that general regulations – such as health and safety – are considered part and parcel of business life.<sup>39</sup> Similarly, an Ipsos/Mori study of perceptions among the general public found that work-related safety, preventing slips and trips and falls were considered “key” among a list of regulatory priorities.<sup>40</sup>

**In terms of service provision, the same Ipsos/Mori study found that regulatory enforcement priorities should include health in the workplace, work-related safety and accidents from transport and machinery.** An HSE commissioned study also found almost universal public agreement about the need for regulation of large-scale enterprises and big businesses.<sup>41</sup>

In terms of public trust, research has established that the HSE is perceived by the public as performing a “fundamentally altruistic role” in an area where the state needs to assume responsibility.<sup>42</sup> In the same study, “independence from political influence” was considered very important for ensuring the effectiveness of health and safety regulation and respondents viewed acting in the public interest, accountability and effectiveness as the three most desired qualities of a risk regulator.

<sup>37</sup> BERR, *Improving Outcomes from Health and Safety: A Call for Evidence*, 2007.

<sup>38</sup> Health and Safety Executive, *An Evidence Based Evaluation of How Best to Secure Compliance with Health and Safety Law*, 2005.

<sup>39</sup> Ipsos/Mori, *Businesses perceptions of regulation*, 2007.

<sup>40</sup> Ipsos/Mori, *Citizen perceptions of regulation*, 2007.

<sup>41</sup> University of East Anglia, University of Wales Cardiff, *Perceptions of and trust in the Health and Safety Executive as a risk regulator*, Research Report 100, 2003.

<sup>42</sup> University of East Anglia, University of Wales Cardiff, *Perceptions of and trust in the Health and Safety Executive as a risk regulator*, Research Report 100, 2003.

### 3.6 CUMULATIVE EFFECTS AND REGULATORY INTERACTIONS

#### SECTION SUMMARY

- The cumulative economic impact of regulatory interactions depends on the nature of the interaction.
- The costs and benefits and the economic implications of interactive effects may change over time.
- Impacts could also change as a result of new business activities or as a result of changes in the industry mix.

**The cumulative economic impact of regulatory interactions depends on the nature of the interaction** (e.g. additional, rival or overlapping requirements). For instance, both COSHH and Asbestos regulations contain a risk assessment component where there may be a potential overlap in requirements for some businesses in some sectors. By comparing the different objectives of health and safety interventions, the business processes that they target and the stakeholders that they affect, a systematic approach can be taken to identifying interactions and determining the incremental impact of individual regulations. There is little in-depth discussion of regulatory interactions in the existing literature. Anecdotal evidence collected as part of the literature search and through interviews conducted for this study is reviewed in Sections 4 and 5.

**The costs and benefits and the economic implications of interactive effects may change over time.** For instance, the benefits of health and safety regulations relating to toxic chemical substances change with the extent to which these substances are used among regulated companies. In the context of asbestos regulations, the HSE recognised this effect in a 2004 workshop on occupational cancer which found that “with regard to future estimates of burden it needs to be recognised that asbestos is being continuously removed and levels of exposure in future will continue to reduce”.<sup>43</sup>

**Impacts could also change as a result of new business activities (e.g. product innovation) or as a result of changes in the industry mix (e.g. relative decline of UK manufacturing, rise of the services sector, etc.).** “Learning by doing” (e.g. process innovation) on behalf of regulated businesses, workers or the regulator may also alter the cost-benefit relationship of a particular regulation. Similarly, wider changes within society may affect some of the non-excludable costs and benefits mentioned above, such as unemployment benefits or the cost of treatment services. Finally, regulatory change (anticipated or not) can create significant uncertainty for affected stakeholders, which may influence the impact of the regulation. This process is described in greater detail in a recent paper published by BERR.<sup>44</sup>

**Research published by the HSE and other stakeholders indicates that regulatory impacts may change over time.** According to a report published by the DTI, for example:

“Over time both consumers and businesses adapt [...] leading to changes in the type and size of costs and benefits. Adaptation to new regulations may initially be costly

<sup>43</sup> HSE, *Burden of Occupational Cancer in Great Britain Summary Report of Workshop held on the 22nd and 23rd November 2004 in Manchester, HSL/2005/54*

<sup>44</sup> CSES, *The Impact of Regulatory Uncertainty on Productivity, 2008*.

for firms and individuals but over long periods the same regulations may become ingrained in social and market norms, reducing their ongoing costs”.<sup>45</sup>

**Similarly, the HSE-commissioned Trends and Context study shows that even in the absence of any regulatory change, health and safety outcomes would be expected to be influenced by wider changes in the economy, including the structure of employment and economic activity:**

“The rate of reportable non-fatal injuries would be expected to decline by approximately 6 per cent between 2004 and 2012 [...] the rate of reported injuries would be expected to decline by 7-8% over the same period. The largest declines in workplace injuries are estimated to occur in those sectors that are projected to exhibit a relative large movement away from employment within manual occupations such as F: Construction and I: Transport, Storage and Communication [...] These [effects] could be either offset or reinforced depending upon the relative position of the economy within the business cycle.”<sup>46</sup>

Because it is difficult to capture benefits that change over time, a report prepared for the DTI suggested that impact assessments should “return to the initial intervention rationale to identify the extent to which the regulation in question contributes to the identified benefit.”<sup>47</sup>

**A systematic analysis of the business processes targeted by a regulatory intervention should facilitate identification of dynamic impacts and regulatory interactions.** For instance, the impact of regulations that target outward-focussed business processes may be more likely to change as a result of product innovation or changes in consumer/market characteristics. In contrast, regulation of inward focussed processes is more likely to be affected by process innovation or “learning by doing” within the firm. An *ex-post* evaluation can help identify learning effects that have occurred in the past and that can inform estimates of dynamic effects for future policy targeting similar processes and/or responds to a similar intervention objective.

### 3.7 COMPLIANCE WITH HEALTH AND SAFETY REGULATIONS

#### SECTION SUMMARY

- Because failure to comply is difficult to foresee *ex ante* and to measure *ex-post*, many cost-benefit analyses of health and safety regulations have assumed full compliance (or complete non-compliance);
- However, there are a number of reasons why regulatory compliance might not be absolute and this could affect the extent of the benefits and costs associated with regulation with potentially significant distributional consequences.
- Regulatory approaches that are regarded as cost effective, efficient, and that set feasible goals, are more likely to enhance compliance behaviour

<sup>45</sup> Frontier Economics, *The impact of Regulation: A Pilot Study of the Incremental Costs and Benefits of Consumer and Competition Regulations*, DTI Occasional Paper 7 (November 2006).

<sup>46</sup> Warwick Institute for Employment Research, *Trends and context to rates of workplace injury*, HSE Research Report 386, 2005.

<sup>47</sup> Frontier Economics, *The impact of Regulation: A Pilot Study of the Incremental Costs and Benefits of Consumer and Competition Regulations*, DTI Occasional Paper 7 (November 2006).

**The extent of compliance with the body of health and safety law is an important factor in determining the costs and benefits – and wider impacts - of regulations.** Because failure to comply is difficult to foresee ex ante and to measure ex-post, many cost-benefit analyses of health and safety regulations have assumed full compliance (or complete non-compliance).

**However, there are a number of reasons why regulatory compliance might not be absolute.** This includes low awareness of regulatory requirements by affected stakeholders (e.g. businesses), varying compliance capacity among different types of stakeholders (e.g. small versus larger businesses) and willingness to comply. The likelihood of less than full compliance has, in particular, been recognised in the approach to more recent Impact Assessments for proposed health and safety regulations.

**A review of evidence regarding the determinants of compliance with regulations, focusing on health and safety regulations, has recently been published by the HSE<sup>48</sup>.** This identifies that there is a complex and varied set of factors that influence compliance with regulations, and that there is no agreement in the published literature as to the key determinants. However, it identifies that regulatory approaches that are regarded as cost effective, efficient, and that set feasible goals, are more likely to enhance compliance behaviour.

**Clearly, if compliance is only partial, this may distort the benefits and costs associated with regulation with potentially significant distributional consequences.** For instance, if compliance is costly and regulatory benefits are social rather than private, there may be an incentive for some stakeholders to free-ride on the compliance activities of others. Intervention rationale, regulatory objectives and the design of regulations (explored in detail in Section 4) may have an impact on compliance rates.

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<sup>48</sup> This research can be obtained from <http://www.hse.gov.uk/research/rrhtm/rr638.htm>

## **SECTION 4 ECONOMIC IMPACT ON BUSINESSES**

### **CHAPTER SUMMARY**

- The impacts of health and safety regulations can be categorised according to the (inward/outward) business processes affected by the regulatory intervention and the level of (strategic/operational) decision-making involved in compliance.
- In much research, the impact of health and safety failures on productivity is addressed primarily from the perspective of costs. The common distinction between direct and indirect costs of health and safety failures can seem as somewhat arbitrary and it is driven by methodological rather than theoretical concerns.
- The organisation of the production process can substantially influence the business impacts of health and safety regulations. By requiring firms to restructure their production processes, health and safety regulations may generate productivity gains that would not have otherwise been identified and realised. These impacts are likely to differ across sectors/types of firms.
- The cost of health and safety regulations is closely linked to the macro and micro level conditions under which the regulated firm operates. Changes in the economy over time may affect how and to what extent health and safety regulation impacts on businesses.
- Regulatory impacts depend to a large extent on the level of response required from the affected business. One of the key reasons for non-compliance is the competing demand for management time from other aspects of the business.
- Company age, life cycles and growth experience and expectations also affect how businesses address health and safety and the effect of regulations on them.
- Several studies find that SMEs are affected disproportionately by health and safety regulation. SMEs with good health and safety systems tend not to be rewarded through lower insurance premiums. SMEs are also more likely to require external resources to afford health and safety related investments
- Investors generally support the idea that health and safety performance is an indicator of good management and there is evidence that this is borne out by better economic performance

## 4.1 INTRODUCTION

### SECTION SUMMARY

- In principle, most impacts of health and safety regulations on business can be considered “economic” in the sense that they affect the economic performance of businesses, individuals or other societal stakeholders;
- The common distinction between direct and indirect costs of health and safety failures can be somewhat arbitrary and driven by methodological rather than theoretical concerns;
- Oft-cited cost concerns relate to general sickness absence, employers’ liability claims and insurance premiums. Accident costs per se appear to be a less prominent motivator for health and safety within businesses.

**In principle, most impacts of health and safety regulations on business can be considered “economic” in the sense that they affect the economic performance of businesses, individuals or other societal stakeholders.** Some of these impacts can easily be quantified (e.g. the costs of investment in equipment as a direct result of regulatory requirements), others have to be valued using an appropriate methodology (e.g. reduced accident rates, improved health at work), while others are difficult to quantify (e.g. the economic benefits of improved employer/employee relationship). In addition, some more indirect impacts of health and safety regulations (e.g. on public trust) can be very difficult to identify quantitatively.

**There are various definitions of business economic performance adopted in the reviewed literature. These definitions mainly relate to productivity.** The concept of productivity describes the efficiency with which inputs in the production process are translated into outputs. Productivity is generally seen as an important measure of business performance with direct implications for profitability and competitiveness. The use of productivity to evaluate the impact of health and safety regulation on individual business is in line with some – though not all – existing research in the field. Box 4.1 has some examples of existing research about health and safety impacts on productivity.

### Box 4.1: Productivity Impacts of Health and Safety Regulation

- □ In the UK, the HSE collected the experience of over 20 major enterprises in applying health and safety regulations to demonstrate the productivity benefits of OSH at enterprise level.<sup>49</sup> Benefits included greater productivity, better plant maintenance, reduced compensation claims, reduced insurance costs, improved client and supplier relationships, improved image, and better staff morale and motivation.<sup>50</sup>
- □ A number of productivity assessment tools have been developed to assess the economic benefits of OSH measures.<sup>51</sup>
- □ In a recent survey of chief financial officers of United States corporations, the Liberty Mutual Insurance Company's Research Institute for Safety found that increased productivity was the most frequently cited (40%) benefit of workplace safety.<sup>52</sup>
- □ Across Europe, a CSES study of 250 SMEs found that 22% thought their business performance had improved as a result of environmental and health and safety regulation, 16.7% thought it had decreased and 43.7% had registered no regulatory impact.<sup>53</sup> Environmental and health and safety regulation was perceived most positively in France and Italy, with 26% or more respondents indicating a positive overall impact on business performance. One in 5 German companies perceived such regulation as positive for business performance compared with only 13% and 14% in the UK and Belgium respectively.<sup>54</sup>
- □ A Finnish study investigating the productivity factors of SMEs found that factors related to an effective health and safety policy (e.g. management, employee participation, work content, employee motivation) were the best explanatory factors for company productivity.<sup>55</sup>
- □ Econometric research published by the HSE has investigated the relationship between health and safety activity undertaken by firms in a sector and sectoral economic performance in the UK. This identified that it is not possible, *a-priori*, to establish whether greater health and safety regulation would reduce productivity, as firms struggle to meet regulatory requirements, or whether it would lead to the adoption of better technologies and production processes that enhance productivity. The results of the econometric analysis indicated that any impact on sectoral productivity is not very strong, but it was acknowledged that this may be because the impact of health and safety activity is felt through secondary sources such as increased capital investment or better labour. The study concluded that increased health and safety activity is not found to be detrimental to sectoral productivity.<sup>56</sup>

**Several studies refer to the costs and benefits of health and safety failures, rather than attempting to evaluate the costs and benefits of health and safety regulation.** These clearly need to be interpreted differently, but evidence of the costs of health and safety failures provide

<sup>49</sup> See <http://www.hse.gov.uk/business/casestudy.htm>

<sup>50</sup> *At the same time, the research highlights the difficulty in accurately capturing costs and benefits of health and safety policies: a number of different methods were applied depending on actual companies that the companies had implemented, there were significant difficulties in quantifying some of the effects and it may be difficult to draw generally applicable conclusions from the responses of a limited number of companies all of whom volunteered to participate in the project.*

<sup>51</sup> *Oxenburgh et al., Increasing Productivity and Profit through Health and Safety, CRC Press, 2004; European Agency for Safety and Health at Work, Economic Appraisal of Preventing Work accidents at Company Level, 2002.*

<sup>52</sup> *Liberty Mutual Research Institute for Safety, From Research to Reality, 2005.*

<sup>53</sup> *CSES, Study on the Burden of Environmental Regulations for SMEs, 2007.*

<sup>54</sup> *CSES, Study on the Burden of Environmental Regulations for SMEs, 2007.*

<sup>55</sup> *ILO, The Economics of Health, Safety and Well-being: Barefoot Economics– Assessing the Economic Value of Developing an Healthy Work Environment, not dated*

<sup>56</sup> *Cambridge Econometrics, Health and Safety Management and Business Economic Performance, 2006, HSE Research Report 510*

an (upper limit) indication of the scale of potential benefits that could be obtained via more effective management of health and safety risks and reduction in the incidence of workplace accidents and work-related ill health, which may be promoted by the health and safety regulatory system.

**In much research (some of which is cited in this Section), the impact of health and safety failures on productivity is addressed primarily from the perspective of costs.** For example, H.W. Heinrich’s “iceberg theory” suggested already in the 1920s that the cost of accidents and injuries (and therefore also the economic impact of health and safety failures) can be divided into direct and indirect costs. According to Heinrich, direct costs include payroll for periods of absence, medical care and medication costs and other costs that are immediate consequences of the accident itself. Indirect costs include the loss of working hours of employees other than the injured, losses of property and output, company image, legal expenses and fines, etc.<sup>57</sup>

An HSE-commissioned study into perceptions of the cost implications of health and safety failures found that concern tended to relate to general sickness absence, employers’ liability claims and premiums. In contrast, accident costs per se were not perceived as a primary motivator for health and safety.<sup>58</sup> A German study showed that health promotion programmes – with an emphasis on prevention – reduced absenteeism very significantly as well as reducing medical costs.<sup>59</sup>

Table 4.1 summarises some of the main direct and indirect costs to business that existing research has identified.

**Table 4.1: Direct and Indirect Costs of Health and Safety Failures**

<ul style="list-style-type: none"> <li>• Productivity decline/lost production</li> <li>• Retraining</li> <li>• Medical and insurance costs</li> <li>• Employee compensation</li> <li>• Fines or legal costs</li> <li>• Damaged equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Recruitment</li> <li>• Poor long-term worker retention/employability</li> <li>• Higher absenteeism</li> <li>• Damage to company reputation</li> <li>• Damage to the environment</li> </ul>
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*Source: adapted from ILO, Occupational safety and health: Synergies between security and productivity, 2006*

**While the distinction between direct and indirect costs of health and safety failures is very common in the literature<sup>60</sup>, it can seem somewhat arbitrary and it is driven by methodological rather than theoretical concerns.** For instance, it is not immediately clear why absenteeism should be classified as an indirect impact of health and safety failures whereas lost wages are classified as a direct impact. Several of the costs cited in Table 4.1 could be (and have been) considered direct or indirect by different authors. Rather than separating two conceptually different entities, the distinction between direct and indirect costs seems to be driven by methodological concerns to do with ease of measurement or the time-delay with which an impact is expected to occur. As a consequence, this distinction does not help explain *why* health and safety failures impose the costs they impose or *who* has to pay for them.

## 4.2 BUSINESS PROCESS APPROACH TO REGULATORY IMPACTS

<sup>57</sup> ILO, *The Economics of Health, Safety and Well-being: Barefoot Economics– Assessing the Economic Value of Developing an Healthy Work Environment, not dated*

<sup>58</sup> Institute of Work, Health and Organisations, *Health and Safety Ergonomics Unit, Perceptions of the cost implications of health and safety failures, Research Report 403, 2005.*

<sup>59</sup> Kreis J and W Bodeker, *Health-Related and Economic Benefits of Workplace Promotion and Prevention.*

### SECTION SUMMARY

- The impacts of health and safety regulations can be categorised based on the (inward/outward) business processes affected by the regulatory intervention and the level of (strategic/operational) decision-making involved in compliance;
- The economic impact of regulation depends on the characteristics of the regulated business and the way in which they interact with the regulation under study.

**Instead of the direct/indirect dichotomy, an approach that is taken in some of the assessment and evaluation evidence reviewed in this study, including some HSE impact assessments, is to categorise the impacts of health and safety regulations based on the actual business processes and work activities that are affected by the regulatory intervention.** With a lesser focus on input “costs” as such, a business process approach can help determine the effect of health and safety regulation on the revenue side of the business. Productivity is a measure of how efficiently inputs are transformed into output (revenue).<sup>61</sup> Analysing the business processes that are affected by a regulation helps to identify those areas within a business where regulation ‘bites’.<sup>62</sup>

**The basic premise supporting a business process analysis of regulatory impacts is that the economic impact of regulation depends on the characteristics of the regulated business and the way in which they interact with the regulation under study.** Within this approach, assessment and evaluation of the economic impacts of health and safety regulations involve examination of the different types of *business practices/processes* within firms that are affected by the intervention and identifying the resulting changes to these practices/processes. For instance, identifying affected business processes provides a good starting point for assessing which markets are affected by the regulations and whether businesses need to adjust the affected business process, obtain or replace capital equipment, retrain workers, make changes to their supply chain (in the case of larger businesses) or market their goods and services differently.

**The idea that regulatory impacts depend on business structure is not new.** In the US, a 1992 study for instance found that exposure to liability stemming from employees’ on-the-job exposure to hazardous materials made firms more likely to adopt a non-vertically integrated production system.<sup>63</sup> More recently, Porter suggested that companies must consider the impact of government action on industry structure, its implications for their relative strategic position and adjust their activities to effectively address these challenges.<sup>64</sup>

However, apart from the two BERR papers mentioned above and which focus on productivity, the literature review conducted for this study did not identify any comprehensive studies that assess or evaluate impacts based on a business process analysis. The advantage of such an approach is that it conceptualises regulatory impact from the perspective of a business’ day to day and strategic operations.

**Two dimensions can be identified along which business practices/processes affected by health and safety regulation might be classified:**

<sup>61</sup> See also CSES, *The Impact of Regulation by Business Process*, DBERR 2008.

<sup>62</sup> See CSES, *The impact of Regulation for Productivity by Business Process, 2008*; and CSES, *The Impact of Regulatory Uncertainty on Productivity, 2008* for an illustration of how a business process-orientated analysis might work.

<sup>63</sup> Barney JB, *Organizational responses to legal liability: Employee exposure to hazardous materials, vertical integration, and small firm production*, *Academy of Management Journal*, 35, 1992: 328-349.

<sup>64</sup> Porter ME, *Competitive strategy: Techniques for analyzing industries and competition*, New York: Free Press, 1980.

- **Inward-oriented** business practices/processes refer to activities that are closely related to the production process within firms and they may include actual production, supply chains, logistics and transport and premises or location;
- **Outward-oriented** practices/processes refer to the revenue-generating side of the business, including marketing and sales, product development, etc.

Often health and safety impact studies focus on inward-oriented processes such as production. However the importance of both inward and outward oriented processes is recognised in current UK impact assessment practice: analysis of the impact of new proposals on business processes/activities forms part of the competition assessment and small firms test included in impact assessments (see Box 4.2).

**A number of other impacts on outward processes have been highlighted in an EU-OSHA report.** This suggests that the impact of health and safety should be characterised in terms of: the company's attractiveness (and that of products) to customers/potential employees; internal organisation (i.e. efficiency / flexibility of production); and ability to innovate products, services and production processes.<sup>65</sup>

#### **Box 4.2: Potential Competition Effects of Health and Safety Regulation**

The Office for Fair Trading mandates that impact assessments consider whether a regulatory proposal:

**(1) Limits the number or range of suppliers directly or indirectly?** For instance, gas safety checks have to be carried out by CORGI certified personnel. This may raise the cost for new entrants into the market (e.g. costs of training, membership fees) and it may preclude some non-certified existing suppliers from carrying out safety checks.

**(2) Limit the ability of suppliers to compete or reduces their incentives to do so?** For instance, bans on the use of certain hazardous materials (e.g. under REACH) might mean that some companies have to adjust the characteristics of their products either because they produce a banned substance or because they use such a substance as an input in their production process. Similarly, some health and safety regulations prescribe certain practises as part of the production process with potential impacts on process innovation.

*Source: OFT, Completing competition assessments in Impact Assessments (2007).*

Finally, the interviews undertaken for this study indicated that businesses associations are well aware of the impacts of health and safety regulations on outward as well as inward oriented activities. Box 4.3 presents a range of examples of industry perceptions of the impacts of Work at Height, Asbestos and COSHH regulations on both types of business processes, obtained from the interviews undertaken for this study.

#### **Box 4.3: Industry perception of the impact of COSHH, Asbestos and Work at Height Regulations on inward and outward business processes**

- □ The way business processes (e.g. on work at height) are adapted on a factory floor is different from a building site. More sector-specific implementation guidance/codes of

<sup>65</sup> Mossink, Jos, *Inventory of Socio-economic costs of work accidents*, European Agency for Safety and Health at Work, 2002.

practice adapted to the specific work activities and business processes in each sector should be provided by the HSE.

- □ Some larger companies are quite clever at using compliance with health and safety regulation to their advantage in marketing terms (in the same way as being seen to be 'environmentally friendly' can produce a competitive edge).
- □ There are marketing opportunities in Health and Safety (e.g. work at height legislation increased lift sales) which may lead to application of existing technologies or reconfiguring existing products (e.g. process/product innovation).
- □ New chemical regulations are biting on sales and marketing of chemicals.
- □ Control of Substances Hazardous to Health (COSHH) regulates the use of and contact with a number of dangerous substances. For many Chemicals firms, compliance with these regulations will require alterations to internal work practices/processes such as ensuring employee safety during production. For some firms however, COSHH regulations also have an impact on the characteristics of the product that they manufacture and its marketing to either the final consumer or downstream Chemicals firms.
- □ Highly visible disasters obviously have an impact on reputation but generally problems do not get into public domain .. it is more a matter of employment relationships .. small firms can rapidly transform themselves into another business if there is a problem. Reputation is irrelevant
- □ COSHH regulations affect a large number of inward and outward oriented processes including: investment (i.e. need to make sure workers are protected); recruitment (i.e. hire people who are able to read/understand literature and willing to participate in training); Supply chain (i.e. concentration/consolidation of companies in the field pushes companies to either specialise or to pull out of the sector); Production processes (i.e. more automation to move individuals working away from risk); marketing 'service with safety' can be used as a marketing tool; some clients (e.g. pharmaceutical companies) tend to take a lot of care over COSHH, while others (e.g. sewage companies) tend to be less careful; some clients can be persuaded
- □ The COSHH focus and environmental issues have led to a move away from hazardous materials in products. However, many of these moves are voluntary (i.e. not required by OHS regulation)
- □ On the sales side, customers often need a lot of help with OHS. A caring company with a focus on product stewardship can improve its standing with customers as a result of OHS.

**The second dimension classifies business practices/processes in terms of the decision-making level within the firm, i.e. what could broadly be described as the 'administrative' dimension of implementing health and safety regulations at company level.** This can be characterised in the following way.

- At the **strategic level**, senior management makes decisions about investments, innovation and product development. Key decisions with regard to health and safety will usually be taken at this level.

- At the **operational level**, other staff members ensure the day to day operations of the business, including production and support functions. At this level, it is more a question of implementing health and safety policies.

For instance, risk assessments as part of COSHH or the control of asbestos regulations can be expected to require senior management time to determine risks and make investments to ensure that adequate precautions are taken. In comparison, safety checks and equipment maintenance as part of the Work at Height regulations can be expected to be carried out primarily by employees as part of their day to day routine.

**Box 4.4: Industry perception of the impact of COSHH, Asbestos and Work at Height Regulations at the strategic and operational levels**

- The impact of Work at Height is mainly at the operational level though there are some resource implications where senior management needs to be aware.
- Work at Height and asbestos regulations impact primarily at the operational level.
- Health and safety is not deeply embedded, still unknown in some parts of management and often not considered to be part of company strategy except in specialised areas.
- Poor health and safety performance almost always means problems elsewhere in management. Good Health and Safety is part of an efficient company.

As these examples show, a business process analysis can help identify a wide range of health and safety impacts in both inward and outward oriented business activities and at the strategic and operational levels. Table 4.2 summarises the distinction between different types of business practices/processes that can be affected by health and safety regulation.

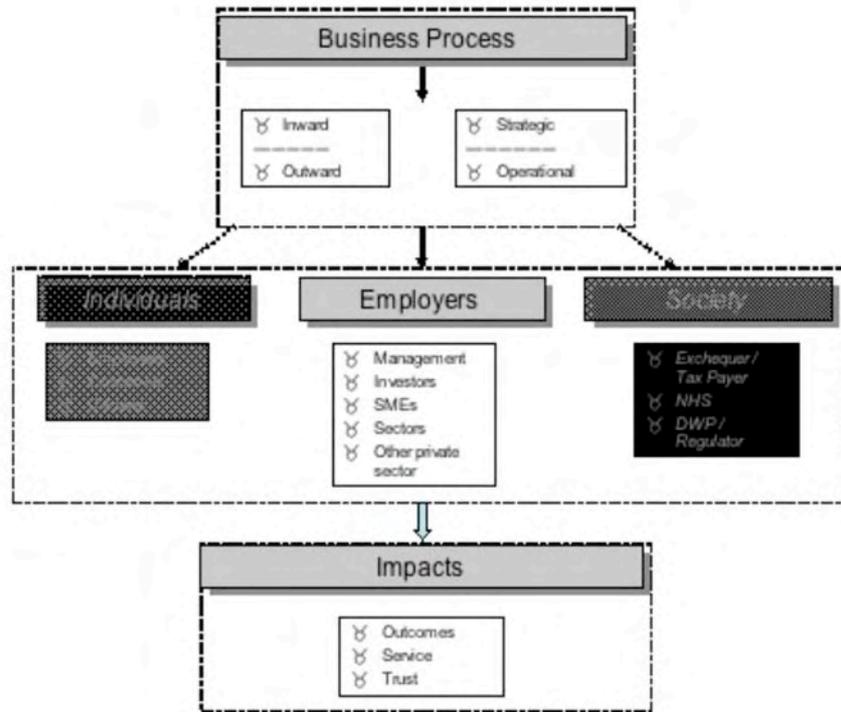
**Table 4.2: Types of Business Processes Affected by Health and Safety Regulations**

<b>Inward</b>	<b>Outward</b>
Production Process	Marketing
Supply Chain Management	Sales
Logistics/Transport	Product Development
Premises/Location	
<b>Operational</b>	<b>Strategic</b>
Support Functions	Senior Management
Production Layout	Investment & Innovation

**Figure 4.1 illustrates how the impact of health and safety regulations on businesses can be conceptualised.** Having identified the business processes where the regulations under study ‘bite’, the assessment or evaluation sets out the business stakeholders that are affected and proceeds to quantify the costs and benefits that the regulations impose for each stakeholder. The

remainder of this section describes the current state of research on the business impacts of health and safety regulation.

**Figure 4.1: Conceptualising the Business Impact of OHS Regulation**



### 4.3 IMPACTS ON INWARD AND OUTWARD ORIENTED PROCESSES

#### SECTION SUMMARY

- The organisation of the production process can substantially affect the business impacts of health and safety regulations;
- By requiring firms to restructure their production processes, health and safety regulations may generate productivity gains that would not have otherwise been identified and realised. These impacts are likely to differ across sectors and types of firms;
- Changes in the economy over time may affect how and to what extent health and safety regulation impacts on businesses;
- Research has shown that the cost of health and safety regulations is intimately linked to the macro and micro level conditions under which the regulated firm operates.

**The literature on health and safety suggests that the organisation of the production process can substantially affect the business impacts of health and safety regulations.<sup>66</sup> It**

<sup>66</sup> See e.g. Dorman, *The Economics of Safety, Health, and Well-Being at Work: An Overview*, 2000; ILO, *The Economics of Health, Safety and Well-being: Barefoot Economics— Assessing the Economic Value of Developing a Healthy Work Environment*, not dated.

has been suggested, therefore, that enterprises *create* the costs of worker absenteeism and the benefits of an effective health and safety system through their organisation (choice of production layout, etc) and their business process strategy. Table 4.3 illustrates this with an example of two hypothetical firms.

**Table 4.3: Impact of an Inward Process on the Incremental Cost of Health and Safety Regulations**

	<b>Production Strategy</b>	<b>OHS Priority</b>	<b>Incremental Cost of OHS Regulation</b>
Firm A	Individual Layout	Low	High
Firm B	Team Production	High	Low

**In this example, firm A has adopted a production process where each worker is responsible for producing each individual unit** (e.g. a piece of jewellery). In this case, the cost of health and safety related illness/absenteeism for the company is the wages of the affected worker (plus any idle equipment). In contrast, Firm B has adopted a production layout where each worker produces a small part of the final product (e.g. a consultancy report). Here, the cost of absenteeism/illness is the sum of the affected worker’s wages, any idle equipment *plus* the impact of the absent worker on team productivity.<sup>67</sup>

**These differences in the organisation of production means that firm B has a greater incentive to invest in the health and safety of its workers even in the absence of health and safety regulations.** Conversely, the incremental cost of health and safety regulations imposed by health and safety regulations is lower than for a firm of type A, which would choose a lower level of protection in the absence of regulation. The way in which inward-oriented business processes are structured (e.g. the production layout or division of labour within the company) can have a significant effect on the economic impacts to businesses of health and safety regulation.

**Table 4.4 repeats this example for an outward oriented business process, such as a firm’s competition strategy.** Firm A operates a “low-cost strategy” which involves producing a good of average quality at the lowest possible price so as to capture the largest possible market share in the short term. In contrast, firm B competes on quality, which allows it to charge a price premium and remain viable even with a more modest market share.

**Table 4.4: Impact of an Outward Process on the Incremental Cost of OHS Regulation**

<b>Firm</b>	<b>Competition Strategy</b>	<b>OHS Priority</b>	<b>Incremental Cost of OHS Regulation</b>
Firm A	Focus on Price	Low	High
Firm B	Focus on Quality	High	Low

**Again, these differences in market strategies will filter through to the personnel policy of both firms, including their health and safety systems.** In the absence of health and safety regulations, firm A whose main concern is cost control, has little short term incentive to adopt strict health and safety policies. In contrast, firm B will be more likely to invest in worker training, pay a wage premium to attract and retain a high quality team and adopt higher health

<sup>67</sup> Example adapted from ILO, *The Economics of Health, Safety and Well-being: Barefoot Economics– Assessing the Economic Value of Developing a Healthy Work Environment*, not dated.



















































































## APPENDIX D SUMMARY MATRIX

Key Steps/aspects	Existing situation	Comments
<b>Existing research on the economic impacts of health and safety regulations</b>	<ul style="list-style-type: none"> <li>• ☐ Overall, there is a wealth of existing research on the impact of health and safety available.</li> <li>• ☐ But from a methodological perspective, much of the existing research on regulatory impacts has a relatively narrow focus on compliance costs or, in some cases, different types of compliance costs.</li> <li>• ☐ Ideally, a cost-benefit analysis includes “as many of the costs and benefits of a proposal as feasible, including items for which the market does not provide a satisfactory measure of economic value”. However, in practice CBA of health and safety regulations has been quite limited in terms of quantifying benefits.</li> </ul>	<ul style="list-style-type: none"> <li>• ☐ An advantage of this approach is that compliance costs are relatively easy to measure. In addition, companies that are affected by health and safety regulation are likely to have at least a limited understanding of the scale of compliance costs that they incur.</li> <li>• ☐ But this approach fails to capture any of the benefits of regulations. It also restricts coverage of both the range of stakeholders affected and the scope of regulatory impacts.</li> </ul>
<b>Bottom up and top down approaches to assessing impacts</b>	<p>There two possible approaches to assessment of the cumulative economic impacts of health and safety regulations:</p> <ul style="list-style-type: none"> <li>• ☐ Bottom up - i.e. to build from assessment and evaluation of individual health and safety regulations, and examine how these overlap and interact with other health and safety regulations, to aggregate to the cumulative economic impacts at the broad level of the body of health and safety regulations;</li> <li>• ☐ Top down, i.e. to assess the cumulative economic impacts of health and safety regulations at a macro (economy-wide) level, to consider how the body of health and safety regulations overall impacts on broad measures such as business productivity, labour market outcomes (including employment), and costs of workplace accidents and work-related ill health, at an economy wide level.</li> </ul>	<ul style="list-style-type: none"> <li>• ☐ The advantage of a ‘bottom-up’ approach is that it is easier to identify the impact of specific regulations or combinations of regulations.</li> <li>• ☐ However, a drawback of a purely ‘bottom up’ approach is that it is more difficult to identify and assess wider impacts.</li> <li>• ☐ Whilst this particular difficulty is overcome with a ‘top-down’ approach, which is better at capturing the overall impacts of health and safety regulations, this type of methodology cannot tackle attribution so effectively, i.e. establish the relationship between specific regulation and economic impacts.</li> </ul>
<b>Step 1 - Rationale for intervention, types of impacts and counterfactual scenarios</b>		
<b>Rationale for intervention - market failure and concept of public value</b>	<ul style="list-style-type: none"> <li>• ☐ The primary rationale for government intervention in all policy areas is the existence of a market failure but stakeholders may want the government to take action to bring about or prevent a course of action even when the features of market failure do not apply.</li> </ul>	<ul style="list-style-type: none"> <li>• ☐ There are a number of intervention rationales that are not directly linked to market failures - situations where social and physical contexts inhibit effective risk management, the legacy of past decisions that do not address risks appropriately (e.g. asbestos), inequality in risk exposure or involuntary exposure.</li> </ul>

<b>Defining counterfactual scenarios</b>	<ul style="list-style-type: none"> <li>•☐ Once the intervention rationale has been established, it is necessary to determine the baseline against which the regulation under study should be evaluated.</li> <li>•☐ This is important so that the assessment focuses on the <i>incremental impact</i> of the regulation without including effects that would have occurred irrespective of the regulation</li> </ul>	<p>Two types of counterfactual are particular relevant:</p> <ul style="list-style-type: none"> <li>•☐ The “do nothing” scenario establishes the baseline against which incremental impacts of proposed regulations should be assessed.</li> <li>•☐ An alternative is to compare different regulatory options, e.g. overall value of different regulatory proposals that respond to the same intervention rationale or the costs and benefits for different stakeholder groups under a variety of regulatory design scenarios.</li> </ul>
<b>Typology of Economic Impacts</b>	<p>Three different types of economic effects of health and safety regulations can be distinguished:</p> <ul style="list-style-type: none"> <li>•☐ <i>Private effects</i> accrue to businesses or individuals that have directly incurred costs of complying with regulations (for example, by changing work processes and practices) and are not shared with the rest of society.</li> <li>•☐ <i>Social effects</i> are shared between groups and individuals across society.</li> <li>•☐ <i>Intended/unintended effects</i> - among private and social effects, a further distinction can be made between intended economic effects of health &amp; safety legislation.</li> </ul>	<ul style="list-style-type: none"> <li>•☐ In principle, most impacts of health and safety regulations on business can be considered “economic” in the sense that they affect the economic performance of businesses, individuals or other societal stakeholders.</li> <li>•☐ Apart from business impacts, health and safety regulations may be expected to generate costs and benefits to a wide range of other groups in society, and this may account for a considerable proportion of their impact.</li> </ul>
<b>Step 2 – Economic Impacts on Businesses</b>		
<b>Business practices/processes and health and safety impacts</b>	<p>Two dimensions can be identified along which business practices/processes affected by health and safety regulation might be classified:</p> <ul style="list-style-type: none"> <li>•☐ <i>Inward-oriented</i> business practices/processes refer to activities that are closely related to the production process within firms and they may include actual production, supply chains, logistics and transport and premises or location;</li> <li>•☐ <i>Outward-oriented</i> practices/processes refer to the revenue-generating side of the business, including marketing and sales, product development, etc.</li> </ul>	<ul style="list-style-type: none"> <li>•☐ Business process analysis can help identify a wide range of health and safety impacts in both inward and outward oriented business activities and at the strategic and operational levels.</li> <li>•☐ Changes in the economy over time may affect how and to what extent health and safety regulation impacts on businesses. Greater use of information and communication technologies (ICT) or increased automation has resulted in a substitution of capital for labour.</li> </ul>
<b>Impacts on internal and external aspects of business</b>	<ul style="list-style-type: none"> <li>•☐ A strategic commitment to health and safety is strongly aligned with businesses wishing to deliver high levels of job enrichment to their employees, engagement with suppliers and innovative new products and services. Existing research also suggests that health and safety regulations have wider, external benefits for business.</li> <li>•☐ But apart from the type of business process that is targeted by health and safety regulations, the regulatory impact will depend to a large extent on the</li> </ul>	<ul style="list-style-type: none"> <li>•☐ A survey of UK company directors found that 79% of CEOs think health and safety has a tangible impact on the reputation of their company and 58% perceive an impact on brand protection, 58% on product and service quality, 64% on sales and profit and 64% on customer satisfaction.</li> <li>•☐ All of these responses indicate that health and safety regulations have a substantial impact on the company’s outward-oriented</li> </ul>

	<p>level of response from the affected business.</p> <ul style="list-style-type: none"> <li>☐ Company age, life cycles and growth experience and expectations also affect how businesses address health and safety and other regulatory matters.</li> </ul>	<p>business processes. At the same time, 88% of CEOs who responded to the survey thought that health and safety had a significant impact on staff morale.</p>
<b>Influence of firm size and sector</b>	<ul style="list-style-type: none"> <li>☐ A disproportionate impact of health and safety regulations on SMEs is confirmed by much – though not all – research.</li> <li>☐ SMEs are more likely to be affected by finance costs in relation to health and safety because they are more likely to require external resources to afford health and safety related investments.</li> <li>☐ Self-regulation regimes are particularly challenging for small employers.</li> <li>☐ There is evidence to suggest that regulatory impacts in health and safety depend significantly on the sector in which the regulated company operates.</li> </ul>	<ul style="list-style-type: none"> <li>☐ For example, a study for the European Commission found that “smaller companies struggle more with regulatory compliance burdens than larger firms because they do not have the in-house capacity to deal with administrative requirements.</li> <li>☐ Regulations in the UK have in recent years increasingly adopted “general standards” instead of more prescriptive command and control regulation. This means that the content of the regulation is determined <i>ex post</i> rather than <i>ex ante</i> and it creates challenges for the assessment and evaluation of regulatory proposals.</li> </ul>
<b>Step 3 - Economic Impacts on Other Stakeholders</b>		
<b>Impacts on individuals an society as a whole</b>	<ul style="list-style-type: none"> <li>☐ Apart from business, there are three main stakeholders - individuals, employers and society as a whole.</li> <li>☐ There is a relative lack of empirical research and evidence on the cumulative economic impacts of health and safety regulations for individuals.</li> <li>☐ There are also only a few attempts in the existing literature to tackle the considerable complexity of assessing or evaluating the cumulative economic impacts of health and safety regulations for society overall.</li> <li>☐ But the wider societal impacts have strong implications in terms of economic performance.</li> </ul>	<ul style="list-style-type: none"> <li>☐ The three groups of stakeholders can be further subdivided into smaller sub-groups of stakeholders, e.g. employee representatives; trade and professional bodies; business networking groups; health and safety consultants and experts; lawyers and occupational health professionals; insurers.</li> <li>☐ There are various methodologies that can be used for considering the economy wide impacts of policies, including regulations. These include input-output analysis, and general equilibrium modelling.</li> <li>☐ However, these methodologies can impose large data requirements, and require many assumptions that may not be realistic in assessing economic impacts.</li> </ul>

# Assessing the cumulative economic impacts of health and safety regulations

## Scoping study

The aim of this study was to identify and analyse evidence on the cumulative economic impacts of health and safety regulations.

The study examined two types of cumulative economic effects – the impact of regulations on business performance and, secondly, the wider effects on other groups in society and society overall. The research, which involved a review of about 100 items of original research from the UK, Europe and elsewhere, included several case studies examining the impact of three regulations (COSHH, Asbestos at Work, and Work at Height) on two sectors (Construction and Chemicals).

The focus on the cumulative economic impacts of health and safety regulations distinguishes this study from other studies and the approach of assessing the economic impacts of individual health and safety regulations in isolation from one another. The purpose of the research was to support efforts within the HSE (and elsewhere in the UK Government) to conceptualise and measure the impacts associated with health and safety regulations, in order to deliver improved health and safety outcomes while minimising regulatory burdens.

The study was carried out for the Health and Safety Executive by the Centre for Strategy & Evaluation Services (CSES) in 2008.

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