

# **Practical Cost-Benefit Analysis for Financial Regulators**

## **Version 1.1\***

**Financial Services Authority**  
**Central Policy**

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This document was prepared, originally in 1998, for the use of policy makers within the FSA.

## **Foreword to edition 1.0**

To demonstrate our performance to Government, consumer groups and the industry, the FSA will have to meet the benchmarks set out in the document “Meeting Our Responsibilities”. As we said there, a key benchmark for judging our regulatory standards will be the balance struck between the interests of our stakeholders. Undertaking cost-benefit analysis, which will in any event be a statutory obligation under the terms of the new legislation, will help us to strike the right balance. And publishing the results will demonstrate to stakeholders that their views are given a fair hearing in the process of setting regulatory standards.

It is therefore clear that any cost-benefit work we undertake should be able to stand up to external as well as internal scrutiny. Thus, as part of our effort to become a world leading financial services regulator, we have developed and had validated externally an approach to cost-benefit analysis that can be applied systematically across our various activities and regulated businesses. The approach is set out in this new guide “Practical Cost-Benefit Analysis for Financial Regulators”, prepared in the Central Policy directorate. I believe that adherence to the principles, tools and techniques set out in this guide can contribute materially to the success of the FSA.

I can see that, given your heavy current workload, it might take time to acquire the necessary familiarity with cost-benefit analysis by ploughing unaided through a 40-page guide! To help, a training session has been developed. I urge you to take advantage of that. After the session, you should be in a position to use the guide to start producing your own cost-benefit analysis. In addition, you should know who else in the FSA’s local policy areas is involved in cost-benefit analysis and whom you could contact in Central Policy for further assistance.

**Howard Davies**  
**May 1998**

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## **Introduction to Version 1.1**

The first edition of this Guide was produced at the beginning of policy making by the FSA. Practical experience since then has shown the methodology for performing cost-benefit analysis (“CBA”) set out here to be sound and thorough. Nevertheless, a number of possible refinements to the explanation of the methodology have come to light. Those, and developments in the legislative requirements, are dealt with in this revised edition. Further reasons for revising the Guide are the new approach to regulation set out in “A new regulator for the new millennium” and enhancements to our internal arrangements for ensuring due process.

Since the FSA’s policy making process is highly decentralised, the task of doing CBA lies primarily with the line policy units. We (the Central Policy Directorate’s CBA section) have prepared this guide to the techniques and tools of CBA to provide a general framework for this ongoing activity. We realise that users of this guide are certain to have questions that are not covered here. We therefore remain available to provide advice and assistance on every aspect of CBA.

## **1. Overview**

### **1.1 Why do CBA?**

Before describing how to perform CBA, it is worth considering briefly why CBA is valuable. As explained in the FSA’s Occasional Paper number 3, regulation needs to address the causes and not just the symptoms of the problems it seeks to counteract. The paper continues: “Applying economic analysis to financial regulation is the only way of getting to the bottom of these issues. In particular, CBA is a practical and rigorous means of identifying, targeting and checking the impacts of regulatory measures on the underlying causes of the ills with which regulators need to deal, those causes being the market failures that in turn may justify regulatory intervention.”

The FSA aims to deliver cost-effective regulation. Accomplishing this goal entails weighing the costs and benefits of proposed policy options before deciding upon which to adopt, or, in other words, doing “CBA”.

CBA seeks to provide the information necessary (but not sufficient) to evaluate policy options by identifying, from the perspective of the UK, the major economic impacts of proposed policies.<sup>1</sup> CBA sorts those economic impacts into costs and benefits, and, where possible and worthwhile, quantifies them using statistical techniques and economic analysis. While doing a CBA does require time and effort, the information gained from a good quality CBA can provide significant pay-backs by improving the quality of regulation and by increasing the confidence of the industry and the public in the regulatory process.

In addition to being FSA policy, CBA is also a part of the consultation arrangements set out for the FSA in the Financial Services and Markets Act (FSMA). The FSMA requires the FSA to include CBA in certain of its publications (see section 1.2). Furthermore, the FSMA requires the FSA to have regard to the principle of proportionality between burdens or restrictions imposed by its regulations and the benefits those regulations create. A good quality CBA will obviously assist the FSA to meet this requirement.

CBA should also help the FSA to fulfil its obligation to explain why its proposed rules are compatible with its other general duties. Those duties include a number of matters on which CBA can shed light, such as the duty to have regard to:

- ◆ facilitating innovation in regulated activities;
- ◆ the competitive position of the UK;
- ◆ the need to minimise the adverse effects on competition of the FSA exercising its general functions;
- ◆ facilitating competition between regulated persons.

The four matters listed here all relate to competition and are especially important, given the Cruickshank report to the Government and the Government's response.

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<sup>1</sup> This guide is written assuming that one is evaluating new policy options (ex ante CBA). CBA can also be used to evaluate current policies to see if they accomplish their goals in a cost-effective manner (ex post CBA). One uses the same techniques in both cases, so the discussion below applies equally to both ex ante and ex post CBA.

## 1.2 When to do CBA

As a matter of general policy, the FSA will subject policy options to CBA in order to accomplish its stated objective of cost-effective regulation. In addition, section 155 of the FSMA requires the FSA to *publish*, as part of the consultative process, a CBA when it proposes to make rules unless, in broad terms:

- the FSA considers there will be no increase in costs under the “appropriate comparison”<sup>2</sup>;
- the FSA considers that any cost increase under that comparison will be of minimal significance only;
- the delay involved in carrying out the consultation process would be prejudicial to the interests of consumers; or
- the proposed rules are fees rules (when alternative arrangements apply).

Taking FSA policy and the FSMA together,<sup>3</sup> it follows that:

- ◆ New rules will usually be subject to CBA (of appropriate scope!) at some point before implementation;
  - Even if the FSA is not legally required to carry out a CBA because the first or second of the exemptions above applies, the FSA will generally wish to carry out at least a preliminary CBA to reduce the probability of making a policy error and to establish the scale of likely benefits;
  - The requirement to publish a CBA does apply even where the FSA is implementing

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<sup>2</sup> The “appropriate comparison” is between the overall position if the rules are made and the overall position if they are not made. We understand that transitional provisions to be inserted in the new legislation will allow costs arising under requirements imposed by the FSA’s predecessor regulators to be brought into account, as part of the overall position, when the FSA proposes rules to replace its predecessors’ requirements.

<sup>3</sup> Although the provisions set forth in section 155 will not come into force until N2 (with the rest of the Bill), FSA policy is to act in accordance with them as of now. This is partly because rules made in this way before N2 seem most likely to benefit from the relevant transitional provisions in the new legislation.

an EU directive or other international agreement. In these cases, it often makes sense to undertake CBA while the agreement is being negotiated, in order to bolster the UK's position. Such CBA can provide much of the material needed for the CBA of the FSA's implementing rules (except in relation to super-equivalent proposals). It could also inform the Regulatory Impact Assessment that the Treasury provides as part of its Explanatory Memorandum for the UK Parliament when the Commission introduces proposals;

- ◆ While the legal requirement to perform CBA might be tied to the public consultation process, CBA can also be valuable in other circumstances. As mentioned above, a CBA of standards under consideration by the EU or Basle could provide an important input into the UK's negotiating position and it is the FSA's policy to use CBA in this way. Likewise, CBA could be useful in relation to supervisory decisions that are likely to have substantial effects upon firms or markets;
- ◆ Given that a CBA must be carried out for certain purposes, doing CBA early in the game can assist in ruling out unsuitable options before time and effort have been expended on converting them from ideas to polished options. Thus, it will usually be worthwhile to integrate CBA into the policy development process from the earliest possible stages rather than leaving it as an "add-on" at the end. Delayed CBA might reveal that the favoured policy option would yield an excess of costs over benefits. That would be a significant problem, absent countervailing non-economic impacts.
- ◆ Recycling extant material (that is the rules, etc of the predecessor regulators), for example to include it in the FSA Handbook, does not require a CBA;
  - However, if the recycled material is to apply to further categories of regulated person or to more of their activities, or if the recycled material is being transformed from informal guidance that need not be followed into "rules", then a CBA should be undertaken (as changes in costs are likely).

The preceding material focuses on the origination of new policy up to the point when consultation on proposed rules takes place. The FSMA also requires the FSA to issue a CBA to



accompany its publication of “details of the difference”. These details are of the differences between the rules made by the FSA and the rules proposed in the relevant consultation. The FSA is required to publish these details if in its own opinion the differences between the proposed rules and the rules made are significant. The general approach to CBA set out in this Guide applies equally to a CBA that accompanies such details. In this case the CBA will need to deal with the overall costs and benefits that will arise from the revised rules but focus in particular on the costs and benefits arising from the differences. (Cost-benefit information on the unchanged parts of the rules should of course be able to be lifted from the original CBA.)

### **1.3 How to do CBA (an Outline of this Guide)**

Suppose that a problem that possibly requires regulatory attention has been identified. The CBA of the policy option(s) should involve the four steps listed below. (Note that, in some cases, the best policy option may consist of simply removing existing regulations and that in others the question facing the FSA is whether or not to extend an existing body of regulation to cover a new area. CBA is equally applicable in such cases.) The four steps are described in section 2, with additional explanation of certain points in sections 3, 4 and 5.

- I** Set the stage: specify the policy goals, identify any constraints that must be satisfied, and determine the policy options to consider.
- II** Decide upon the scope and depth of the analysis.
- III** Assess the costs and benefits of the policy options, and the distribution of those costs and benefits across the affected sectors.
- IV** Provide an output that illustrates the costs and benefits of the options under consideration, and any other advantages and disadvantages that have been identified.

It should be obvious that step II depends upon the likely importance of the policy under consideration. Under the FSMA the FSA is required to have regard to the need to use its resources in the most efficient and economic way. Thus the extent of the analysis under steps II to IV should also depend upon the likely importance of the policy under consideration.

As we mentioned in 1.1, CBA provides necessary but not sufficient information to evaluate policy options. Policy makers must decide how to weigh the costs and benefits that a CBA reveals, and whether, in the light of their objectives, a policy option is worth pursuing given both its costs and benefits (i.e. its economic impacts) and its non-economic impacts (e.g. on fairness or equity).<sup>4</sup> The output from step IV therefore needs to be used in the broader policy making process. To facilitate that, we have designed steps I to IV so as to integrate, to some extent, the CBA with the rest of the policy making process. In particular, we draw attention to the value of consumer impact assessments and small business litmus tests. An important advantage of this approach is that it keeps within the CBA options that have strong non-economic advantages but a poor cost-benefit balance. (A pure CBA would be concerned only with the economic impacts of policies and would therefore reject such options at an early stage.)

While providing detailed case studies is beyond the scope of this guide, the CBA unit has prepared case studies of various regulatory proposals that are available upon request. In addition, one may wish to examine *A Cost Benefit of Analysis of Statutory Regulation of Mortgage Advice* (October, 1999), available on the FSA website. We conclude by listing useful data sources in the Appendix.

## **2. The CBA Process (Steps I – IV)**

### **2.1 Introduction**

This section sets out how to undertake CBA. Each of the four steps in the process is described. There is additional material on step II (scope and depth) in section 3. There is additional material on step III (assessing costs and benefits) in section 4 (collecting information) and section 5 (measurement).

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<sup>4</sup> A policy's costs and benefits – its economic impacts – include items such as the results of its effects on the conditions in which firms compete and the economic resources it releases or absorbs. The conditions in which firms compete are affected by measures such as disclosure and prescribed standards of conduct. Economic resources include labour and physical assets such as computers.

## **2.2 Carrying out a CBA: The Four Steps**

### **I Set the stage**

- CBA provides a method to assist policy makers to choose between policy options designed to accomplish a given policy goal. CBA does not set policy goals, nor does it determine which options one should consider. In other words, CBA is simply a (valuable) tool that policy makers can use to improve the policies they design.
- The pursuit of any given policy goal occurs within a broader policy context. This context may impose constraints on how one goes about accomplishing any given policy goal. For example, the FSA may pursue a policy designed to increase investor protection, but the broader policy context may require that it do so in a way that (for example) does not increase the regulatory burden on small business or worsen the plight of the socially excluded. Note the implication that it is important to consider not just impacts on consumers but impacts on different classes of consumers.
- Ideally, one will explicitly incorporate any such external constraints into one's CBA. One can do so in two ways. First, one can create a list of "must satisfy" constraints, and simply reject policy options that do not meet those constraints. Second, one can treat the constraints as "factors to consider". In this case, one would add a specific impact category to capture such a factor to the list of more general impact categories discussed below. For example, in addition to the general "Compliance Cost" category discussed below, one could add a category "Compliance Cost of Small Businesses". One would then assess the impact of each policy option not only on overall compliance costs, but also on the compliance costs of small businesses.
- In most cases, however, one's CBA will evaluate the economic impact of policy options with regard to the UK as a whole, without incorporating other social policy constraints.

### **II Decide upon the scope of the analysis.**

- One must choose the number of options to consider and the depth of analysis to meet the

FSA's policy objective and the legislative requirement.

- Increasing the scope of the analysis increases the probability of selecting the right option and makes it easier to show that one has done so, but increasing scope and depth also requires time and effort. Since it is more important to be sure about major policies than minor policies, and since it is more difficult to convince outside parties that one is doing the right thing on major policies (as outside parties are more likely to have strong opinions on them), a major policy requires a CBA of greater scope than a minor policy. Clearly, there will in some cases be different views about what is “major” and what is “minor”. It is sensible to err on the side of caution, to ensure the adequacy of the policy making process.
- Since changing policy inevitably entails costs, a new policy (or deregulation) is to be preferred only if it is superior to the status quo. Consequently, one must always consider the option of leaving things as they are. It is then convenient to evaluate other options, including the option to remove regulations, in terms of the differences they would make to the status quo (implying that one will not have to analyse the status quo itself).
- While one's knowledge of the matter at hand (gained by experience, industry contacts, research, etc.) will generally determine the options that merit attention, it is also important to include options that outside parties think worth considering (to give them confidence in the process).
- One uses CBA to provide the information needed to decide between policy options rather than to explore each policy option on its own. Consequently, one should generally evaluate the options included in the analysis to the point needed to establish the relative magnitude of their net benefits or the qualitative trade-offs involved rather than to the point of being able to estimate precisely and accurately the net benefits produced by each one.
- For the option favoured by the FSA and encapsulated in proposed rules, the FSMA requires the FSA to publish an estimate of the costs and an analysis of the benefits that will arise if the proposed rules are made. The scope of the analysis of the favoured

option needs to be sufficient to enable the FSA to meet that obligation.

- For additional material on determining scope and depth, see section 3 below.

### III Assess the costs and benefits of the options under consideration. Refine options if possible.

#### *The Basic Approach*

- To reiterate one of our key points: one uses CBA to provide the information needed to decide between policy options rather than to explore policy options on their own. Keeping this dictum in mind will allow one to focus on the big picture and to limit efficiently the analysis that must be done.<sup>5</sup>
- Ideally, a CBA will allow one to compare costs and benefits within and between the policy options under consideration. Obviously, such comparisons are facilitated if one can measure all costs and benefits quantitatively, but that is not always possible. Where one cannot reasonably obtain quantitative estimates for one or more of the options under consideration, one should aim to develop qualitative estimates of costs and benefits that enable one to: A) form a judgement as to whether or not a given policy option yields net benefits; and B) rank the policy options under consideration. Note, however, that under the FSMA the FSA will typically need (where possible) to publish a *quantitative* estimate of the costs, and an analysis of the benefits, of the preferred option encapsulated in the draft rules on which consultation takes place. (This is inferred from the fact that the FSMA makes a distinction between “estimate” and “analysis”.)
- The effects of a given policy option can be considered using the market impact classification scheme described in Table 1. This list is neither exhaustive nor definitive, and should be treated flexibly. Even so, some documentation of the standard categories is required by FSA to show that one is not overlooking anything. Furthermore, the tools we discuss below in Section 5 are quite general, and should help one to assess costs and

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<sup>5</sup> Often, one will begin by considering several broadly similar policy options. A fairly preliminary CBA may reveal that several such options are clearly less cost-effective than others. One can then quickly reject the dominated options and concentrate the analysis on those that remain.

benefits whatever categories one uses.

- Though cost benefit analysis itself is neutral with respect to distribution of costs and benefits, the distribution of costs and benefits may be of interest for broader policy reasons. It is therefore worthwhile to state who gains and who loses (and why) as a result of a given policy option. Calculating a total for costs (and, where possible, benefits) will usually have required that they be estimated separately for different groups or market participants in any case.
- In this context, a useful rule of thumb is to adopt an alternative perspective. In other words, if one is developing a proposal to reduce burdens on firms, immediately assess the likely impacts on consumers. And if one is developing a measure of consumer protection, consider its likely effect on the relevant businesses.
- It is often useful to “brainstorm” policy impacts by beginning with a list of the market impact categories, considering each category in turn, and writing down effects as they come to mind (perhaps providing a qualitative indication of importance on the basis of one’s knowledge of the market in question). We provide such a list in Table 2 (the “Market Impacts Table”). If one’s previous experience has not equipped one with the knowledge carry out this task, section 4 on obtaining information should be helpful.

*Risk Analysis, performance measurement and matters to which the FSA must have regard*

In considering the likely effects of a policy as a step towards identifying its costs and benefits, there is no substitute for knowledge of the relevant businesses, markets and consumers. However, as the rationale for regulatory intervention is typically some kind of market failure, identification of costs and especially of benefits is likely to be helped significantly by the use of risk analysis. Risk analysis is central to CBA, as it often reveals the potential benefits of intervention, just as it is central to the FSA’s new approach to regulation being developed under Project Arrow. Authoritative material on risk analysis in the context of regulatory policy making is already available in the form of The Better Regulation Guide and Regulatory Impact Assessment published by the Regulatory Impact Unit in the Cabinet Office. Copies are available from Central Policy.

Table 1	
Description of the Impact Categories	
◆ Direct Costs	<ul style="list-style-type: none"> <li>– Designing, monitoring and enforcing regulations requires resources. The value of the extra resources that would be absorbed by the regulatory regime in respect of a proposal is the <i>direct cost</i> of that proposal.</li> </ul>
◆ Compliance Costs	<ul style="list-style-type: none"> <li>– Bringing a product or service to market requires resources not only for production but also for complying with regulation. The value of the extra resources (including time) that would be used by firms and/or individuals to comply with a regulatory proposal is known as the compliance cost of that proposal.</li> </ul>
◆ Quantity of the good sold	<ul style="list-style-type: none"> <li>– As regulation can affect the costs of bringing a product to market, it may raise or, by promoting efficiency gains (see below), lower prices. An increase (decrease) in the price of a product will generally decrease (increase) the volume of that product's sales.</li> </ul>
◆ Quality of the goods offered	<ul style="list-style-type: none"> <li>– A great deal of regulation, especially on the retail side, is designed to improve the quality of products in a market by, for example, mandating minimum standards or impeding the sale of inferior products.</li> </ul>
◆ Variety of products offered	<ul style="list-style-type: none"> <li>– By influencing the cost of specific products within a general class, regulation plays a role in determining the variety of the products available in that class.</li> </ul>
◆ Efficiency of competition	<ul style="list-style-type: none"> <li>– Regulation can have a significant effect on how firms compete; for example, it can generate the benefits associated with more efficient competition by prompting firms to shift from spending resources on obtaining customers, where the expenditure has no net impact on the size of the market as a whole, towards competing by providing value-for-money products.</li> </ul>

- As already mentioned, the FSA is developing its own distinct approach to regulation. It is described in broad terms in “A new regulator for the new millennium and ”. Risk analysis is an important part of the new approach that is evolving under Project Arrow. This will facilitate use of CBA within the FSA’s policy making process. For example, the approach allocates resources by combining the probability that an event will occur with the likely size of its impact, and that is just the kind of technique one would expect to use in a CBA. Once the FSA’s new approach has been implemented, we recommend that where possible the risk analysis it requires be combined with the risk analysis one would in any event undertake for one’s CBA.
- The FSA is subject to other disciplines with which CBA overlaps. Particularly important is the FSA’s need to develop performance indicators and publish information on performance measurement. One would expect the benefits anticipated in an ex ante CBA to be indicative of the performance we seek to achieve and ex post CBA could be used to measure our performance.
- Also important is the obligation to publish with proposed rules a statement of why they are compatible with the FSA’s general duties, which include, in addition to the statutory objectives, having regard to factors such as competition, innovation, the competitive position of the UK, proportionality and economy and efficiency. Designing a CBA in accordance with the analytical structure set out in this Guide should provide the information needed to prepare a credible statement. We recommend, however, that one gives specific thought to this requirement when designing one’s CBA.



Table 2	
Market Impacts	
<i>Effects</i>	<i>Importance (e.g., Major, Minor)</i>
♦ Direct Costs	
♦ Compliance Costs	
♦ Quantity of the good sold	
♦ Quality of the goods offered	
♦ Variety of products offered	
♦ Efficiency of competition	

### *Some technical issues*

- Generally, it is reasonable to analyse policy options in the context of a reasonably well working, albeit not perfect, free market economy. This means, for example, that firms try to maximise their profits and consumers try to maximise their welfare and that both of them are free to react to new conditions and information. It also means that cost increases will tend to lead to price increases. Price increases tend to lead to lower volumes of transactions and a consequent loss of benefit to all concerned. (On the other hand, greater information, transparency and market confidence can lead to price falls.)
- When determining a policy's effect keep in mind how those affected may react. For example, a regulation that raises the cost of conducting a given type of transaction may cause firms to shift those transactions to other jurisdictions; a regulation that eliminates one type of product will result in customers choosing a substitute, and so on.
- Be sure to assess the impact on small business ("the small business litmus test"). Regulation may have a disproportionate effect on small businesses. This is not just about burdening existing small businesses. If regulation imposes high fixed costs, it can deter new small businesses from entering the market. This can be damaging to competition and innovation, matters of great importance in the FSA's accountability arrangements. Thus the FSA must carry out small business litmus tests on proposals that might affect small businesses. Usefully, the Cabinet Office publication on "Better Regulation" mentioned above has a section dealing with this and reference should be made to it.
- Similarly, the analysis should include a consumer impact assessment. Government might be about to set standards for these: Consumer Policy and Research Department will know the latest position. Meanwhile, the National Consumer Council has suggested that the main elements of a consumer impact assessment could be the impacts of a policy on the cost and quality of services, choice and information.

### *Hints for Conducting a CBA Efficiently*

- Be as specific and concrete as possible. Note in this context that the FSMA requires the

FSA to publish an estimate of the costs and an analysis of the benefits that *will* arise from the proposed or made rules.

- Care should be taken to distinguish between one-off and continuing costs or benefits.
- To avoid getting lost in the details of a CBA, it is often extremely useful also to keep in mind a rough idea of the stakes involved (e.g., the number firms/consumers and/or the volume of commerce and consumers affected, etc.).
- Keep in mind the possibility of placing quantitative or qualitative upper and/or lower bounds on the costs and benefits of each alternative. Placing bounds on costs and benefits is almost always far easier than estimating them precisely, and the established bounds will often be enough to demonstrate the relative merits of a given policy. Establishing rough preliminary bounds on the costs and benefits of a policy option will often enable one to determine if it is worth pursuing further. Along these same lines, rough preliminary bounds on the costs and benefits of a policy option will often suggest refinements that will improve cost-effectiveness (e.g., CBA may reveal that the original policy imposes a major cost through an adjustable feature).
- Break-even analysis can be used to determine the bounds one's analysis should aim for. To illustrate, if one can establish that a given option's cost will be about £20 million per year, one can demonstrate that the option will produce net benefits if one can bound benefits at greater than £20 million per year.

#### **IV Provide an output.**

- The output of a CBA should include a statement of the problem that the policy is designed to address, the main option(s) considered, and an appraisal setting out and, as appropriate, quantifying the costs and benefits of those options. If the costs and/or benefits of the policy options under consideration are such that the options are difficult to rank, be explicit about the trade-offs involved. Be sure to specify the key assumptions upon which the analysis is based, thereby enabling policy makers to form a judgement regarding its robustness.

- An output along the above lines, including an analysis of the benefits and an estimate of the costs that will arise if the proposed rules are made, will suffice to enable the FSA to meet its legal obligation to publish a CBA in the Consultative Paper regarding a given policy. In addition, as already suggested, the FSA might need to refine its initial CBA in the light of the responses to the CP before providing a final version of the analysis for internal decision making and/or publication.
- The output can be more or less elaborate, depending upon the scope of the CBA. It is helpful to construct the output around the completed Cost/Benefit Summary Tables.

### **3. Depth of Analysis (Step II)**

Step II in the CBA process is to determine the depth of the analysis. One uses CBA to decide between options, but how can one tell if one has explored the policy options enough for the CBA to facilitate choice between them?

At each point of doing analysis, one can think of the cost of stopping and deciding between policy options now. The cost of stopping is basically the cost of making a mistake. The more analysis one does, the lower the cost of stopping (as there is less risk of a mistake). It follows that one should stop analysing when the cost of doing further analysis exceeds the benefit created by further reducing the risk of a mistake. The cost of doing further analysis is not just the cost of the FSA spending more time on an issue rather than on something else. It is also, more importantly, the cost of delaying the implementation of any response to the market failure (risk) identified.

In this context, “sensitivity analysis” is useful. To conduct a sensitivity analysis, one varies the relevant parameters within their possible values (as determined by the analysis so far) and assesses the options under these different assumptions. One can then judge how likely it is that a given option is preferable, and form an opinion regarding the magnitude of the error that one could make by choosing now rather than after achieving greater certainty. For example, in the case of Custody reform, we were able to bound the costs of the new regulations at between £10 and £20 million per year, and we estimated that benefits would be in the region of £100 million per year. So, even assuming the worst case (costs at the maximum £20 million per year),

benefits greatly exceed costs. Consequently, we did not find it worthwhile to try and refine our cost estimate. If, however, we had found that costs would be between £50 million and £150 million per year, then it would have been worthwhile to try and estimate costs more precisely.

The above approach implies that:

- Since the cost of one's time is always positive (the FSA has a lot to do), one should never pursue CBA to the point needed to acquire complete certainty.
- For a given degree of certainty about which option is best, the cost of choosing the wrong option is much higher for major policies than for minor policies. Thus, other things equal, one should acquire greater certainty on major policies.

What does this mean in practice? Consider two examples.

### *3.01 Example: Limited Issue/Limited Redemption (LI/LR) Funds*

Under present (May 1998) regulations, an open-ended investment fund must provide unlimited issue and redemption (investors can put money into or take money out of a fund whenever they wish—subject to normal business hours, etc.). Complying with this requirement can be costly for funds that specialise in illiquid securities (e.g., emerging markets funds and funds that use derivatives to hedge market risk). These costs in turn limit the number and variety of such funds, thereby depriving investors of choice. Collective Investment Schemes Department (CIS) decided to consider an alternative policy that would allow funds to limit issue and redemption (while requiring that all such limits are clearly disclosed and not unduly severe).

To do the CBA, we began with the premise that increasing choice generally creates benefits (for properly informed or advised market participants or consumers). The increase in choice provided by allowing LI/LR funds would come at a cost only if allowing a variant type of fund created confusion among potential investors, thereby increasing the costs of choosing funds generally and/or leading investors to choose inappropriate funds. However, since funds that wish to limit issue and/or redemption must clearly disclose those attributes, the chance of confusion creating an adverse impact appears to be low. Thus, on the basis of first principles

alone, we concluded that it is highly probable that a policy of allowing limited issue/limited redemption funds is preferable to the status quo of not allowing them. Since this policy will not have a major impact on either consumers or the market, we stopped the CBA performed prior to issue of the Consultative Paper (“CP”) there. To ensure that this CBA did not miss the mark, CIS asked about the investor confusion issue in the CP itself.

Note that this consultation took place before the requirements for CBA in the FSMA were published. Since the Financial Services and Markets Bill was first published, the FSA has sought in its consultations to anticipate the procedural requirements of the final legislation. Thus, if the FSA were now to issue a CP proposing rules on LI/LR funds, it would need to consider whether the proposed rules, if made, would give rise to costs of more than minimal significance. If the FSA thought that would be so, it would need to include in the CP a CBA comprised of an estimate of the costs and an analysis of the benefits that will arise if the proposed rules are made. If the FSA genuinely believed that the costs would be of no more than minimal significance, then FSA policy – and ministerial expectation – is that a statement to that effect should be included in the CP. The purpose of this statement is to explain the absence of a CBA and to act as a catalyst for comments.

The CP on LI/LR funds did not in fact include proposed rules. These will be put forward, under the procedures described above, as part of the consultation on the FSA’s Handbook. The responses to the CP did not argue that investor confusion will create significant costs (or point out another issue that we must consider), so it is *probable* that the CBA on LI/LR funds is largely done. But it is always important to check subsequent market developments.

### *3.02 Example: CAD II*

In April 1997, the EC issued a formal proposal to amend CAD (the *Capital Adequacy Directive*) so that the capital requirements for commodity firms would take account of market risk (CAD II). CAD II would allow such firms to calculate their capital requirement by using either the Maturity Ladder (ML) method or the Value at Risk (VAR) method. The problem with CAD II is that the VAR method is difficult and expensive to implement (especially for smaller firms),

while the ML method achieves simplicity by making assumptions that tend to overstate the capital required. Requiring firms to hold excessively high levels of capital needlessly raises their costs, and so adversely affects the UK economy (both by raising costs directly and by creating an incentive for firms to transfer business to jurisdictions with more reasonable capital requirements). The situation was thus as follows:

- ◆ The expense imposed by CAD II as written could in principle result in firms shutting down or transferring business out of the EU. Commodities trading is a big business in the UK. (We estimated a *potential* loss of £40 million pa.) It was therefore worth thinking about alternatives to the VAR and ML methods of calculating capital adequacy.
- ◆ Ensuring that firms possess adequate capital is one of the primary goals of prudential regulation. Consequently, any suggested alternative method would have to satisfy the condition that a firm using that method to determine its capital would fail due to adverse price movements no more often than it would if it were using the VAR method (VAR being an already agreed upon standard). Note that it is far easier to establish that the benefit of an alternative is broadly the same as the benefit of the status quo than it is to quantify the total or incremental benefit of the alternative.
- ◆ EU directives in this area bind the UK. Thus, any alternative we developed could only be implemented by convincing the EU to modify CAD II.

Given the likely costs of CAD II, the SIB developed an alternative method of calculating required capital (the *Extended Maturity Ladder* or EML). This method was based upon the ML method with modifications that allowed firms to calculate their required capital based upon the risk of the commodities they actually traded. This modification had the effect of greatly reducing required capital - and therefore costs - for firms that would otherwise use the ML. Clearly, we could not urge the EU to allow firms to use the EML until we had shown that it met the VAR standard, and the CBA designed to establish that would have to be thorough and of high quality.

There was no easy way to quantify the benefits of EML. We used extensive simulations of commodities firms' actual portfolios under historical price movements to show that a firm that

held such a portfolio and calculated required capital using EML would be likely to fail no more often than one that calculated required capital using VAR. This involved using external consultants to assist on the simulations and considerable amounts of staff time, and yielded an extensive report but it demonstrated that the benefits of EML are broadly similar to those of VAR.

## **4. Obtaining Information**

Assessing the costs and benefits of the options worth pursuing depends critically on obtaining information. This is best achieved through a combination of regulators' experience and existing knowledge, consultation and information obtained from the business and academic press. The last two items in this list merit further comment.

### **4.1 Consultation**

Consultation spans a continuum of activity, ranging from informal contacts with firms and consumers to formal Consultative Papers, and is a vital part of good policy making.<sup>6</sup> In practice, the FSA will usually wish first to consult informally in order to obtain information for the CBA that shall form the basis of the cost/benefit section in a Consultative Paper that proposes rules. The responses to the CP will then often suggest possible refinements to the published CBA, which can be incorporated into a CBA of the rules actually made, should one be required.

Sometimes the FSA will issue a discussion paper or preliminary CP that does not include rules. These can elicit valuable cost-benefit information and are an ideal vehicle for cost-benefit questionnaires. To elicit useful information, it is important that such papers include preliminary analysis of likely costs and benefits. On this, see 4.12 below.

We emphasise that consultation provides an extremely valuable (and at times unique) source of information about the market in question. Firms and customers are generally willing to provide information in consultations, in part because all parties have a strong interest in seeing that markets are soundly regulated. Yet, while there is a great commonality of interest between

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<sup>6</sup> The FSA's formal consultation process is dealt with in the FSA's document "The Open Approach to Regulation" and in the legislative requirements.



regulators and the regulated, interests are not identical. One should thus bear in mind the old arms control motto when interpreting the results of consultations (with either firms or consumers): “Trust...but verify”.

To illustrate the scope and usefulness of consultation, consider the case of credit derivatives.

#### *4.11 Example: Credit Derivatives*

Credit derivatives are a new and increasingly important financial product. Because of their unique features, pre-existing regulation did not seem to allow banks to treat these products in a satisfactory manner. Informal discussions between the Bank of England ("BoE") and the industry found that there was indeed a problem, and one that was only going to become more severe with credit derivatives' increasing popularity.

Since most of the knowledge about credit derivatives resided in the banks that developed them, the BoE formed a specialist working group consisting of representatives of those banks and BoE staff. The BoE set the task of that working group (think of a way of dealing with credit derivatives that meets the goals of prudential regulation), and left it to the group itself to accomplish its task in the least costly manner. The BoE published a Consultative Paper, based on the work of the group, to obtain comments from a wider audience. The results formed the foundation for discussions in the Basle Committee on banking supervision.

#### *4.12 Consultative Papers*

While the special circumstances of credit derivatives resulted in the use of almost the whole panoply of consultative methods, most cases require far less intensive consultation. Yet, the FSMA requires the FSA to consult on policy changes, with the consultation paper (CP) having to include (subject to minor exemptions) a CBA of the proposed requirements. One can take advantage of this process to insert CBA questions into a CP to ensure that one's analysis has not missed the mark, and/or to set the agenda for meetings with outside parties regarding the policy in question. A Discussion Paper (DP) issued in advance of a CP is an even better vehicle for collecting cost-benefit information. Information included in the responses to a DP can be used in the production of the CBA required in the CP. Experience of developing cost/benefit material

through DPs and CPs suggests that one might wish to keep the following in mind:

- ◆ Questions should be kept as short as possible to maximise response; this is not only a matter of length: questions which are short on paper but which are difficult to understand may discourage the recipient from answering.
- ◆ Care is needed in selecting firms for interviews; this is to avoid using the same firms repeatedly and to avoid focusing excessively on large firms to the detriment of small firms.
- ◆ Meetings: Face to face meetings with a representative sample of affected firms is very useful. The basis of the meeting may be the questionnaire.
- ◆ Consumers: In many cases, consumers' views are needed. These can be obtained by asking authorized firms and/or the trade bodies to pass on a questionnaire to consumers with whom they have had dealings. If the proposals attract sufficient publicity, a sufficient number of consumers requesting the relevant questionnaire may be obtained, although one should treat these results with caution because of the self-selecting nature of respondents. Alternatively, it may be possible to commission an external agency to conduct market research. The main factors to consider here are the time available and the costs (between £40 to £60 per interview in the case of life disclosure). Adding questions to the regular surveys carried out by market research firms may be a cost-effective approach. The particular issues already mentioned as relevant to consumer impact assessment (cost and quality of services, choice and information) clearly need to be addressed in any approach to consumers.

#### *4.13 The Small Business Litmus Test*

The Regulatory Impact Unit of the Cabinet Office is concerned that every CBA “should normally identify two or three typical small businesses and discuss with them the impact the regulations will have on them.” The consultation should cover the practicability and cost of implementing the regulations, and the impacts on competitiveness (in both domestic and export markets).

## **4.2 Information from the Business and Academic Press**

Aside from the FSA library, one may obtain a great deal of information from on-line databases, the net, and academic libraries (via interlibrary loan or the FSA's membership of the London Business School Library). We provide more detailed information on how to access these data sources in the Appendix.

## **5. Measuring Costs and Benefits (Step III)**

### **5.1 Introduction**

CBA seeks to provide the information necessary (but not sufficient) to evaluate policy options by identifying, from the perspective of the UK, the major economic impacts of proposed policies. A policy will have a market impact only in so far as it affects "real resources", that is, if it changes the availability or allocation of resources in the economy.

The six impact categories we discuss below (direct costs, compliance costs, quantity, quality, variety, and efficiency of competition)

At first glance, it might seem surprising that "Price" is not included as an impact category. This omission is deliberate, as a change in the price of a good *by itself* does not affect real resources. To see why this subtle but important point is true, suppose that the price of a good rose. If nothing else changed (people bought the same amount, etc.), then the only effect of the price increase, from the perspective of the economy as a whole, would be to transfer wealth from the purchasers to the suppliers of the good. Purchasers would then spend a little less on other goods, but this decrease would ultimately be offset by an equal increase in expenditure by the suppliers of the good whose price increased. Consequently, from the perspective of the economy as a whole, the price increase would have no effect. However, the FSA does need to include in its published CBAs price increases and items such as payments to compensation schemes: information about these is relevant to those who might reply to consultation documents..

Of course, changes in price nearly always alter behaviour, and so will have an effect on real resources (e.g., a price rise will usually cause people to purchase less of a good). Thus, while thinking through the effects of a given policy option, one must consider how a given policy option will affect prices. But, the actual impacts that flow from any changes in price will generally show up in one of the six market impact categories we consider.

Price will matter directly when analysing who obtains the benefits and who bears the costs of policy options. Thus, since price will indirectly affect real resources and directly affect distribution, one must keep an eye on price when conducting a CBA.

## 5.2 Valuing Market Impacts

To be concrete, we discuss the tools for and methods of measuring the value of costs or benefits in the context of specific categories of market impact, though the techniques and approaches are of general application.

In addition, recall that a new policy option is assessed in terms of the difference it makes relative to the status quo. Thus, costs or benefits arise from any *changes* that the new policy creates (i.e., if a new policy *reduces* compliance costs relative to the status quo, then the new policy creates a benefit). One measures the value of a change in the same manner whether the change is for the better (creates a benefit) or negative (imposes a cost). Thus, while we usually consider only a cost or a benefit in each section below, one can use the same methods to measure either costs or benefits. We cover weighing costs and benefits over time at the end of this section.

### 5.21 *Changes in Direct Costs*

The direct costs of regulation are generally quite easy to measure as they consist of expenditure by regulatory bodies. The direct costs of a given regulation depend on whether it will require more (or fewer) enforcement staff, IT resources, etc. While it will usually be the case that new policies will not bring about any significant increase (or decrease) in direct costs, an extension of regulation into a new area (e.g., mortgages) or bringing a large number of new firms/people under the aegis of an existing body of regulations may significantly affect direct costs. In such cases, it will generally be worthwhile to determine the direct costs of the proposed regulations explicitly.

## 5.22 Changes in Compliance Costs

In most cases, a firm or person affected by a regulation must use resources (time and/or money) to comply with that regulation.<sup>7</sup> Most studies of the cost of regulation find that compliance costs are at least a small multiple of direct costs, although the position could vary considerably.

Firms acquire the resources needed to comply with regulations either through buying them on the market (e.g., paying to upgrade a computer system) or by allocating the resources internally (e.g., spending several hours a week on compliance rather than some other activity). While one can easily measure costs that arise from direct market transactions, measuring the value of resources allocated internally (i.e., with no market transaction) is more difficult. To measure the value of such resources, two related techniques are often very useful, namely, revealed preference and opportunity cost. Consider each in turn.

### 5.221 Revealed Preference

Suppose that a person wishes to accomplish a task in the least costly manner, and may accomplish the task by one of several options. By selecting or *revealing a preference* for a given option, the person discloses which option does the job at least cost.

Why is this insight useful? Often, a regulated party will have many ways of complying with a given regulation. One will find it hard to cost each option but, if one can place a cost on *any* method of complying, then revealed preference lets one bound the cost of *all* methods of complying. Suppose one can place a cost on method A. The regulated party either chooses method A (in which case one knows the cost of complying) or he chooses another method which must be less costly (or he would have chosen method A). The cost of method A then (upper) bounds the cost of compliance.

### 5.222 Opportunity Cost

The economic or *opportunity* cost of doing X is not doing what one would have done instead—

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<sup>7</sup> As a general rule, it is safe to assume that compliance costs are passed on to customers in the long run.

that is, the next best alternative Y. To illustrate, suppose that regulation requires one to spend an additional hour on compliance work. What is the cost of that hour? If one spends an hour on compliance, then one is not spending that hour doing the next best alternative. And what is that next best alternative? If one spends an additional hour at work, then one loses an hour of “leisure”. Consequently, the opportunity cost (or just cost) of an additional hour of compliance work is the value lost from an hour less of leisure. For convenience, leisure time is often valued at one’s earnings rate.

### *5.223 An Application—IFA Compliance Costs*

To illustrate how the two concepts are used in practice, we develop the case of conduct of business regulation mentioned above. To simplify the issue for the purposes of this example, suppose that an IFA generates 200 hours of compliance work per year, and that a typical IFA’s net marginal wage (after tax) is £30 per hour (implying a total income of about £57,000 per year for an IFA who works 40 hours per week for 48 weeks per year).<sup>8</sup> We wish to estimate the cost imposed upon an IFA by that 200 hours of compliance work.

First, we put a first rough upper bound on compliance cost by multiplying the 200 hours of work by an IFA’s average net wage of £30/hour: £6000 pa. Exploring the accuracy of this estimate with the industry revealed that a great deal of the time that must be spent on compliance does not actually require the IFA himself (record-keeping, etc.). Not surprisingly, then, Compliance Service (“CS”) firms have sprung up to which IFAs can subcontract about 150 hours of their annual compliance work. A CS firm charges £1200 per year to perform this work. However, only a small proportion of IFAs uses CS firms.

One might then think that one should estimate the total cost of doing that 150 hours of work by using a weighted average of the cost of IFAs and CS firms doing it. The average would be close to £4500 pa (£30\*150) as few IFAs use CS firms. But that would be wrong.

Since each IFA could use a CS firm, those that do not must find it not worthwhile to pay £1200 pa to have that work done. Since IFAs wish to minimise the cost of compliance, they choose the

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<sup>8</sup> An IFA must pay business expenses out of his total income, so an IFA’s average take home pay is of course much less than £57,000 per year. However, these business expenses are largely fixed (e.g., rent). It follows that the IFA himself receives most of the revenue from the marginal hour worked, and hence that an IFA’s marginal wage is

cheaper option. By *revealing a preference* for doing it himself, an IFA indicates that the cost to him is less than the price a CS firm charges. Thus, one may place an **upper** bound on the cost of the first 150 hours of compliance work of about £700 (£1200 less estimated tax deduction of 40%) for all IFAs. (Presumably, most IFAs find it cheaper to do the work themselves in the “slack” time between client meetings.)

Turn now to the cost of the last 50 hours of compliance. Assume that an IFA spends an extra hour a week at the office to perform this work. (By revealed preference, he either does it this way or a less costly way.) Since an IFA can vary his hours, an IFA works until his benefit from an extra hour of work (his after-tax wage) equals the cost of that extra hour of work (the value of an hour of leisure). Assuming that IFAs do their most productive tasks first, the benefit of the last hour of work is less than the benefit of the average hour of work. To err on the side of caution, one can take as the benefit of the last (or marginal) hour of work the **average** hourly wage, after tax, of £18.<sup>9</sup> The cost to an IFA of the 50 hours of compliance work is then about £900 ( $50 * £18$ ).

Thus, an IFA's total cost of compliance equals around £1600 pa (£700 + £900) rather than our first rough estimate of £6000 pa. By gathering information through consultations, taking account of tax and using the tools of revealed preference and opportunity cost, we were able materially to refine our estimate of compliance cost, in this case reducing it by about 75%.

### *5.23 Valuing Changes in Quantity*

When the price of a good goes up, the quantity of the good purchased usually goes down (harming those who produce and purchase the good). Compliance costs can significantly affect the cost of doing business, and so alter the prices of goods in the market. It follows that one should consider the impact of a change in compliance cost on business volume (we took the direct costs of compliance into account above).

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about £30 per hour.

<sup>9</sup> We examine after tax earnings here because we are looking at the cost **to an IFA** (which was our mandate for this particular exercise). In many other cases, pre-tax costs and revenues will be relevant to the CBA. In the present case, too, the loss of tax revenue would be relevant if we were considering the impact on the economy as a whole.

To get an idea of the impact that a change in compliance cost will have on the price to the customer, one can, broadly, assume that all compliance costs are passed on to customers. The percentage change in price in the market due to a change in compliance costs will then equal the change in compliance costs divided by total sales. (These are necessarily approximations, so it is usually sensible to ignore factors like VAT.) Consider the impact of a change in quantity arising from a change in price in retail and wholesale markets in turn.

### *5.231 Changes in Quantity: Retail Markets*

The value a retail investor places on a good equals the amount that he or she is willing to pay for that good, given all the other goods that he or she might purchase instead. It follows that a retail investor will go ahead and purchase a given good (rather than something else) if the price of that good is less than the value he or she places upon it. The gap between the value a purchaser places upon a good and the price he pays to obtain that good is known as “consumer surplus”. Consumer surplus thus measures the benefit retail investors derive from having the option to buy the good in question. A policy that decreases (increases) consumer surplus thus imposes a cost (conveys a benefit) upon society that one needs to take into account in a CBA.

To illustrate the concept of consumer surplus, consider buying a book. Suppose that, after searching through Borders to see what’s available, one would be willing to pay £25 for Peter Tasker’s Japanese financial thriller *Samurai Boogie*. The price of the book being a mere £14.99, one purchases the book and obtains a consumer surplus of £10.01. That is, from one’s own perspective, finding *Samurai Boogie* on the shelf is equivalent to finding £10.01 on the street. From society’s perspective, it is even better than that, as the £10.01 of consumer surplus one obtains from finding the book does not cost anything to create (whereas one can only find £10.01 on the street if someone else loses it there).

Of course, not everyone likes Japanese financial thrillers. For example, a person who valued *Samurai Boogie* at £15.00 is made only very slightly better off by the book’s existence (consumer surplus = £15.00 – £14.99 = 1p), and someone who values the book at £14.99 or less does not benefit from the book’s existence at all.

Now suppose for the sake of this example that one is considering a regulation that would require



financial thrillers to be vetted for the accuracy of their descriptions of the financial regulatory system, and that the cost of complying with this regulation would raise a financial thriller's price by 2p. This regulation would not deter a person who values *Samurai Boogie* at £25 from purchasing it, though it would decrease such a person's consumer surplus to £9.99 (£25 – £15.01). However, we pick up this cost in the direct and compliance cost of regulation impact categories above, so we need not consider here how regulation affects the consumer surplus of consumers who continue to purchase the good in question.

Now consider the person who values the book at £15. Due to the price increase that would follow from the adoption of the vetting regulation, this person would no longer purchase *Samurai Boogie*, and so would lose 1p of consumer surplus. Since this decrease in consumer surplus is equivalent to reducing this person's income by 1p, this regulation imposes a cost of 1p. We do not pick this cost up in any of our other impact categories, and so must include it in this category (changes in quantity).

Regulations generally alter the price of financial products by only a small amount (in percentage terms). Reflecting upon the book example, one can see that a small increase in a good's price following from a new regulation is unlikely to impose a significant loss upon those who stop purchasing the good as a result.<sup>10</sup> The loss is likely to be small because the only people who stop buying the affected good after a small price rise are the people who would be just about as well off buying something else instead (which is why they *do* buy something else after a small price rise).

One can build upon this intuition to derive a first order approximation for the magnitude of the loss of consumer surplus arising from reduced purchases (henceforth “reduced purchase CS loss”) caused by a small price rise. To begin, one can generally assume in the case of retail consumers that a 1% increase in price will cause about a 1% percent decrease in sales volume, and vice versa. (In fact, in the case of financial services, this approximation might overstate the effect of a price increase, as prices in this market often are not very explicit and do not alter the sum that the consumer must hand over to the intermediary. But that is not material here.) Given this approximation, it can be shown a price rise of X% will cause a reduced purchase CS loss of

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<sup>10</sup> Since the effect of a small price decrease is just the reverse of the effect of a small price increase, I shall not explicitly consider that case here.

$$\text{Reduced Purchase CS Loss} = X^2 * £50,000 \text{ p.a. per Billion of Pre-Price Rise Purchases}$$

To illustrate, the reduced purchase CS loss arising from a 1% price increase on £1 billion in purchases equals only £50,000 p.a. ( $1^2 * £50,000$ ), and that arising from a 5% increase equals only £1.25 million p.a. ( $5^2 * £50,000$ ).<sup>11</sup> Hence, unless a proposed policy will significantly increase price, or unless the affected market is massive, one can safely ignore reduced purchase CS loss.<sup>12</sup>

### 5.232 *Changes in Quantity: Wholesale Markets*

The relationship between changes in price and changes in volume is trickier in wholesale markets, as wholesale firms are often in a position to shift business to other jurisdictions in the face of even small increases in the costs of doing business in the UK. Thus, price differences that are small in absolute terms can still have significant effects. Consequently, it is best to start with consultations with the affected firms and their customers to assess the impact of a price change on volume.

To measure the cost to the UK of a decrease in business volume, begin by noting that the benefit created by a given transaction equals the sum of the benefit of the producer and of the consumer. One can thus place a lower bound on the cost of a decrease in business volume by calculating the loss in benefit to the producer (it is often far easier to estimate the impact upon producers than upon consumers because producers publish their accounts). To see how to go about doing so, consider again the CAD II case discussed above.

### 5.233 *An Application—CAD II*

Consultations with the commodities trading firms affected by CAD II revealed claims by 17 firms that they would either close up or move to other jurisdictions.<sup>13</sup> These firms produced

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<sup>11</sup> Those who have studied economics will recognise that the reduced purchase CS loss formula provides an approximation for the area of the welfare loss triangle arising from a small price increase (assuming a demand elasticity of 1). For those who have not studied economics but who are nonetheless interested in a more complete understanding of this topic, the EFR department will be happy to provide the reduced purchase CS loss formula's full derivation.

<sup>12</sup> In the event that one thinks that a proposed policy may increase price by more than about 5%, one may wish to consult the EFR department to see if a more sophisticated analysis is required.

<sup>13</sup> Because the affected firms were small and, we understood, more or less wholly owned by their directors, we assumed that the firms that would "move" to other jurisdictions would literally move. If the firms would "move"

gross revenues of about £170 million per year. Now, think about where these revenues come from: the firms employ raw materials, labour and capital to produce value (revenue minus costs). If the firms leave the business, the raw materials and labour will have to find alternative employment. But, in a reasonably well working market economy, the price of labour or raw material just equals its opportunity cost (value in next best use). Thus, the labour and raw materials will be snapped up by other firms and employed (to a first approximation) just as productively. Shifting labour and raw materials out of the commodity trading sector thus creates no costs. However, if firms really do move from the UK, they take their capital and the value they create. Thus, the resulting loss in value to the UK would be their revenue minus the costs of labour and raw materials.

The accounts of publicly traded firms in the financial services sector ([www.sec.gov](http://www.sec.gov)) indicate that about one half of firm revenue goes to raw materials (e.g., computer hardware) and one quarter to wages. Consequently, one may bound the cost to the UK of having the 17 firms leave at about one quarter of total revenue, or £40 million pa.

The total cost to the economy of having these firms leave would of course exceed this bound, as it includes neither any cost to consumers nor additional market ramifications (due to loss of liquidity, etc.). Estimating the full market impact of this measure would be difficult...and *in this case* was unnecessary. The goal of the CAD II CBA (for our purposes here) was to show that CAD II as originally put forth would impose significant costs. Demonstrating that costs would exceed £40 million per annum accomplishes that goal, so undertaking the difficult task of estimating the full market impact of the original rules was not worthwhile. In the case of a CBA produced under the new legislative requirements, a judgement would need to be made as to whether estimating a floor for the value of the costs would constitute an estimate of the costs.

### *5.24 Valuing Changes in Quality*

Regulation can improve quality by raising standards or by seeking to improve the quality of the match between buyer and product (“suitability”). Consider each method of improving quality in turn.

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only in a legal sense, with all real economic activity remaining in the UK, then the costs of the firms “moving” would be significantly less than the costs estimated here.

### 5.241 Raising Standards

Few consumers can ascertain the quality of a financial product (e.g., the probability that a custodian provides *safe* custody). Given this difficulty, individual suppliers can get sucked into a “race for the bottom”. The dynamic is the following: raising quality definitely raises costs. But, if consumers cannot observe quality, then consumers will not be willing to pay more for a product claiming to be of higher quality. (It might just be overpriced.) Thus, consumers will tend to purchase cheaper (low quality) products, and firms will compete by offering them. One might observe this equilibrium even if all consumers and all producers would prefer to offer high quality products. Regulation can rectify this “market failure” by requiring firms to offer high quality products. Firms can then commit to offering high quality (and charge the high quality price) and consumers know that they will get the high quality for which they are paying. (The higher quality that regulation creates can more than offset the higher price that regulation entails, giving a decrease in quality adjusted price. So a great deal of regulation, especially on the retail side, is designed to ensure quality standards.)

To measure the value of an increase in quality brought about by regulation, one must estimate the price that consumers would be willing to pay for that increase in quality. The easiest way to do so is to present consumers with the status quo and the proposed alternative, explain how the two options differ from each other and ask the consumers how much they would pay for the enhanced features of the alternative.

The SIB carried out such an exercise in the case of custody. The SIB designed measures (mentioned above) to increase the quality of custody (make assets in custody safer). The SIB bounded the cost of implementing these measures at £20 million. Consequently, the measures were worth implementing if the value of the benefits they created exceeded £20 million.

To estimate the value that consumers placed on higher quality, the SIB surveyed consumers about whether a demand for regulation in this area existed in general and about how much they would be willing to pay for the increased safety offered by the new policy. The survey revealed that consumers to whom the remote but potentially significant risks associated with custody were clearly and fairly described were strongly concerned with the regulation of custody. Consistent with those feelings, they were willing to pay £1 per £10,000 in custody to improve safety. Given that assets valued in excess of £1 trillion were in custody, the total benefit of

increasing safety was in the order of £100 million. Thus, as benefits greatly outweighed costs, the measures were implemented.

In the case of complex goods, it is difficult for consumers to say in the abstract how much they would be willing to pay. In a more complicated case, then, one could not put much reliance on stated willingness to pay. However, one could still use survey data to ascertain areas of consumer concern and to rank alternative approaches.

#### 5.242 *Suitability*

While it is at times possible to make statements about “absolute” product quality (i.e., statements that hold for all consumers), it is often the case that a product’s quality depends upon the identity of the purchaser. For example, a product that provides an excellent return assuming that the purchaser makes regular contributions every month for 25 years and a terrible return otherwise may be a high quality (or *suitable*) product for a consumer with a steady income and a low quality (or *unsuitable*) product for a consumer with a highly variable income. By affecting how consumers select products (either directly or through intermediaries), then, financial regulation can affect the (realised) quality of the products that people purchase.

In general, one would measure the value of a policy option that will result in consumers purchasing more suitable products by estimating the benefit they obtain by purchasing those products rather than what they are purchasing currently. In some cases it will be possible to obtain a quantitative estimate of this benefit. For example, to develop the case discussed above, suppose that a policy mandating improved disclosure would enable consumers with highly variable incomes to avoid products that required regular contributions over long periods of time and to select products that allowed more irregular contributions. One could measure the benefit produced by this policy by estimating the gain those consumers would obtain by switching to the (for them) higher quality product. An estimate of the gain could be based on the value of the contractual penalties/repeated initial charges avoided.

In other cases, obtaining a quantitative measure of benefits will be more difficult. For example, if improved disclosure standards allowed consumers to select products of a more appropriate level of risk, one would have to estimate the value that consumers placed on (avoiding) risk—a

difficult task. In such cases, qualitative measures of benefit may be the best that one can obtain.

### *5.25 Valuing Changes in Variety*

As a general rule, an increase in choice creates a benefit. (The consumer can find a product that more precisely fits his needs.) Measuring the value of that increase in choice is, however, extremely difficult. Indeed, one of the more celebrated recent papers in econometrics (statistical economics) was devoted to estimating the value of introducing Apple-Cinnamon Cheerios. In practice it is often best to measure changes in variety qualitatively. The changes can then be used as a tiebreaker between a new option and the status quo (as it was in the LI/LR funds case discussed above) or between two new policy options.

### *5.26 Efficiency of Competition*

Suppose that, due to market imperfections, consumers have a difficult time distinguishing good value from poor value products. Firms can then sell poor value products and make a profit. In such a market, firms will have a strong incentive to compete by convincing people to buy poor value products (to compete *for* the market) rather than by offering good value products (to compete *in* the market). The competition to sell poor value products will be fierce, given the profits to be made. Indeed, to a first approximation, competing *for* the market will waste all the profit that selling *in* the market creates. (Resources spent on competing for the market are wasted from the point of the UK as a whole because the same benefits are created no matter who sells to the consumers, implying that the UK as a whole is better off by minimising the resources expended on selling to those consumers.)

Regulations that reduce the profits of selling in such markets by encouraging efficient (in the market) competition therefore create a benefit by reducing the resources wasted competing for the market (e.g., high commissions, excessive advertising, etc.). The value of this benefit equals the value of the decline in resources wasted, which in turn equals the decline in the costs of the firms competing for the market. Determining what is “wasted” is of course difficult.

#### *5.261 An Application—Life Assurance Disclosure*

This approach to estimating the benefits of creating efficient competition was used by the SIB in the case of Life Assurance Disclosure. Before 1995, consumers had a very difficult time ascertaining the actual price they were paying for life assurance products. Since consumers could not observe price, life assurance products tended to be overpriced. The profits from selling in this market led to fierce competition for the market, with the inevitable waste of resources thus entailed. The SIB enhanced competition in the market by mandating disclosure of prices, therefore enabling consumers to shop around for products offering value for money. Once consumers could find products that offered value for money, firms would have an incentive to provide such (lower cost) products (and would therefore cut the - wasted - costs of bidding for the market). The total revenues available in the market would then decline.

To estimate the magnitude of the benefits brought about by disclosure reform, the SIB hired the consulting firm NERA. Through consultation and statistical analysis, NERA estimated that costs would eventually fall by £800 million per annum. By the argument above, this fall in costs equals the benefits of the policy.<sup>14</sup>

### *5.27 Weighing Costs and Benefits Over Time*

Often, a given policy's costs and benefits occur at different times. For example, firms must pay some up-front cost to change systems, but having the systems in place creates benefits in future periods. To compare costs and benefits that occur at different times, economists compare the *present discounted value* ("PDV") of the costs and benefits at the time the decision to pursue a policy is to be made. The principle behind discounting is that normally people prefer to receive money sooner rather than later and prefer to pay bills later rather than sooner. In line with this, more weight can be given to earlier costs and benefits than to later ones by applying a discount rate. The discount rate ( $r$ ) defines how rapidly the value today of a future £1 falls away through time, just as a rate of interest determines how fast the value of £1 invested now will increase. Thus, to calculate a present discounted value of a benefit  $B$  that occurs  $t$  years in the future, one uses the following formula, which can easily be written into a spreadsheet:

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<sup>14</sup> The extent to which costs actually did fall is an interesting question in its own right but one about which it might be futile to speculate. It can be very difficult to distinguish between changes in a market that were occasioned by a regulatory initiative and changes that would have arisen in any event. In any case, of course, the decision on whether or not to implement disclosure reform had to be made using the best *available* estimate of what would happen rather than with full (ex post) knowledge of what would occur.

$$PDV [B] = \frac{B}{(1 + r)^t}$$

Thus, if the discount rate is 10%, £1 of benefit in a year is worth  $\pounds 1/(1 + 0.1)^1$ , or about £0.91 today, and £1 of benefit in two years is worth  $\pounds 1/(1 + 0.1)^2$ , or about £0.82. The proper discount rate to use varies with the circumstances, but generally the Treasury recommends using 8% in commercial cases. Using this discount rate, it can be shown that the value today of a continuing flow of £1 a year forever (in recurring costs or benefits) is approximately £12. Hence, value changes due to recurring costs or benefits are usually more important in assessing overall impacts than value changes due to one-time events (e.g., transition costs). As costs and benefits need to be shown separately in CBAs prepared under the FSMA (and it is useful to show them separately in any event), one must not of course net them against each other in the present value calculation. EFR department is happy to give case by case advice on appropriate discount rates.

An automated version of the calculation set out above is available in Excel, under “Insert – Function”.

### **5.3 Determining the Distribution of the Costs and Benefits**

Due to broader policy considerations, the distribution of costs and benefits may affect a policy option’s overall desirability. Of course, distributional issues fall outside of formal CBA, and there is no general way to evaluate distributional impacts in any event. However, after doing a CBA, one will be in a position to determine how the costs and benefits of a given policy option are distributed, and why this distribution arises. It will therefore generally be worthwhile to state how costs and benefits are distributed.

When thinking through the distributional impact of a policy option, it is important to bear in mind that we generally assume that the affected market works reasonably well. In a reasonably well working market, (above normal) profits will generally be competed away, and firms can enter or leave the market in question. Ultimately, then, it is likely that most of the costs and benefits will be borne by customers (though not all customers need be affected in the same way).



## Appendix: accessing data sources

- ◆ Online Databases: Lexis/Nexis and the Financial Times ([www.ft.com](http://www.ft.com)) maintains an extensive searchable database of newspapers and periodicals from around the world (including all major UK papers).
- ◆ Financial Data/Research on the Net: There is an enormous amount of material relating to banking and finance on the net. To provide a place to begin searching for what one is looking for, we provide here the addresses of sites containing descriptions and links to economic/finance sites across the web.
  - <http://econwpa.wustl.edu/EconFAQ/EconFAQ.html>
  - <http://netec.mcc.ac.uk/WebEc.html>
  - <http://www.yardeni.com>
- ◆ US Banking and Regulatory Agencies, International Financial Agencies: These major sites are searchable by key word, and contain policy releases, discussion papers, and testimony by senior officials. Testimony usually contains cites to relevant agency and/or academic research.
  - The Federal Reserve: <http://www.frb.gov>
  - The SEC: <http://www.sec.gov>
  - The CFTC: <http://www.cftc.gov>
  - The IMF <http://www.imf.org>
  - The World Bank <http://www.worldbank.org>