

Agenda

Advancing economics in business

The benefits of financial regulation: what to measure and how?

The UK Financial Services Authority is required to undertake cost–benefit analysis of proposed new regulations and when changing existing rules. Impact assessments are also playing an increasingly prominent role in policy-making at the European level. Measuring the benefits of regulation often presents particular challenges in these exercises

There is a considerable body of literature on impact assessments and cost–benefit analysis of financial services regulation. However, existing studies often do not provide a comprehensive overview of the dimensions of benefits that regulation may be delivering, or may contain little discussion of how different types of potential benefit can be measured. On the empirical side, existing cost–benefit analyses often focus on the quantification of costs, leaving the benefits assessment to qualitative discussion, without measurement or explicit analysis of the mechanisms through which regulation is supposed to deliver the intended change.

In a report for the Financial Services Authority, Oxera has developed a framework for assessing the benefits of financial regulation. The framework sets out the relevant dimensions of benefits, the mechanisms through which regulation may deliver these benefits, and the approaches that can be adopted to measure the relevant dimensions. Rather than describing the many empirical tools and techniques, which are well documented in the economics literature, the framework discusses at a conceptual level how benefits can be measured and allows the user to ask the right questions as a starting point for any assessment of the benefits of financial regulation.

What to measure?

The benefits of regulation should be measured as the improvements in market outcomes that result from regulation. In ex post analysis, where the aim is to evaluate the impact of regulation already in place, measurement requires comparison of actual market outcomes in a regulated world with outcomes that would have arisen in the ‘counterfactual’ world without regulation. Where a proposed regulation needs to be evaluated ex ante, the assessment requires

measurement of the likely improvement in market outcomes compared with the status quo.

Regulatory intervention in markets may be justified only where markets fail to deliver efficient outcomes. Where there are no market failures, where risks are limited, and where incentives between market participants are well aligned, intervention by a regulator is likely to bring net economic costs. Understanding the types and severity of problems that would pertain in a market without regulation is therefore critical to identifying the potential benefits of regulation.

From the perspective of consumers, there are seven broad dimensions of detrimental market outcome that emerge from the combined effect of market failures, risks and incentive misalignment.¹ The mitigation of these detriments defines the set of potential benefits of regulation (see Table 1).

The potential detriments and corresponding benefits in Table 1 are intended to capture those arising at the level of the end-consumer—eg, private savers or investors and firms raising capital. However, most also apply to regulated financial services firms as intermediate consumers that operate somewhere along the vertical chain of industry relationships.

From the perspective of a regulated firm as a ‘producer’ of financial services, the detriments that may arise in the absence of regulation relate to the following.

- **Higher costs**—higher costs in a market without regulation include, for example, increased efforts that firms would need to expend on monitoring their counterparties. In this case, the potential benefits of regulation would come in the form of a reduction in transaction costs.

This article is based on the Oxera report ‘A Framework for Assessing the Benefits of Financial Regulation’, prepared for the Financial Services Authority, September 2006. Available at www.oxera.com.

Table 1 Types of consumer detriment and potential benefits of regulation

Types of consumer detriment in the absence of regulation	Example/explanation of detriment	Potential benefits of regulation
Sub-optimal choice	'Mis-buying' of financial products (eg, when poorly informed consumers decide to buy a product not suitable for them)	Value that consumers derive from better choice (ie, more optimal fit between what they buy and what they need)
Reduced choice	Lack of consumer confidence may make it less worthwhile for firms to offer certain types of product, reducing the choice available to consumers	Value that consumers derive from increased choice (ie, reduction in opportunity cost of not being able to buy what could be available)
Higher costs from operational risks	Losses that arise to consumers as a result of an operational failure by a firm (eg, 'mis-selling' or other negligent advice, fraud, systems breakdown); higher prices if failure is compensated by the firm and cost passed on to consumers	Reduction of expected losses and other costs associated with operational failure
Higher costs from financial risks	Losses that arise to consumers as a result of the default of a firm (eg, deposited funds cannot be returned, losses from operational failures cannot be compensated)	Reduction of expected losses and other costs associated with financial failure
Higher costs from systemic risks	Costs incurred by consumers due to widespread failures of the financial system	Reduction of expected losses and other costs associated with systemic failure
Higher prices from market power of firms	Consumers pay excessively high prices to a firm exercising its market power	Reduction of excessive prices
Higher costs from transaction/system inefficiencies	Consumers incur higher transaction costs (eg, due to the need to monitor financial intermediaries if there is no regulator to perform this function)	Reduction of transaction costs/prices arising from inefficiencies, including consumer search costs
Financial exclusion	Even if markets were efficient, some consumers may not be able to gain adequate or affordable access to financial services	Value consumers derive from improved access to financial services

Source: Oxera.

- **Lower output**—in addition to possible output reductions through higher costs, in the absence of regulation output may be lower due to demand-side effects. For example, the existence of regulation may create demand from consumers who might otherwise be too risk-averse and reluctant to engage in certain financial transactions.

Under the assumption of reasonably competitive markets, the costs and benefits incurred by firms are passed on to consumers. Thus, the potential benefits for firms are 'intermediate' benefits and should already be reflected in the 'ultimate' consumer benefits in Table 1. For example, reduction in monitoring or capital costs would be passed on to consumers via lower prices. Similarly, increased consumer confidence due to regulation may allow firms to offer, and allow normal profits on, certain products that would not have been profitable in the absence of regulation, increasing choice for consumers.

Increases in market efficiency and improvements in other market outcomes for consumers and producers of financial services that result from regulation translate into direct benefits to the economy. In addition, for the identification and measurement of benefits to be complete, the wider economy (ie, parties outside the

financial services sector) should therefore be considered as a third recipient group of potential benefits.

Direct measurement of improvements in market outcomes

Direct measurement of improvements in market outcomes works best for ex post analysis when it is possible to compare the relevant metric defining a particular outcome before and after the regulation. The measurement exercise may then be approached using *event-study methodology*, where specific regulatory actions are treated as events around which to measure performance improvements. For example, where a regulation is expected to have reduced the price of investment products, measurement would focus on changes in prices, returns or spreads of the products following implementation.

Inferences about the benefits of regulation may be confounded because changes in market outcomes over the period of analysis may be influenced by factors other than the regulation. A number of econometric techniques are available to test for structural breaks before and after implementation while controlling for these other factors. However, these techniques usually impose significant data and research requirements and may not always be feasible in practice.

Methods that are built around before/after comparisons do not work when measurement is required *ex ante* for policy decision-making. One technique available for *ex ante* measurement is *consumer surveys*. These can ask consumers directly about the value they would attach to the introduction of a proposed regulation. Surveys can be designed to obtain estimates of either consumers' 'willingness to pay' for the change or their 'willingness to accept' compensation if the regulation were not introduced.

Such techniques have been applied with some success in the past. However, they rely on subjective valuations of benefits, which may differ significantly across consumers and depend on consumers' ability to fully foresee and quantify the effect of a regulation. Consumers' survey responses of what they would do or how they would behave following a regulatory intervention may not reflect their actual decision-making when interacting with financial intermediaries. In addition, if the source of detriment is a lack of consumer knowledge or understanding about financial products or the quality of intermediaries—eg, resulting in mis-buying or mis-selling—how can consumers be expected to quantify the benefits of a regulation if they are not in the position to evaluate the extent of the problem that gives rise to the regulatory intervention in the first place?

Deriving benefit estimates from consumer surveys can therefore be problematic, particularly with regard to benefits concerning the optimality of purchase decisions (establishing other benefits, such as reductions in search costs, may be easier through a survey). In many cases, evidence of actual consumer decisions is required to provide reliable information about whether changes to regulation lead to more optimal decision-making. Where such evidence is required before actual changes can be observed in the market, it may be possible to conduct *controlled experiments* with samples of consumers to assess how they behave when making decisions under the existing and proposed regulatory environment. An example is a recent study undertaken by the US Federal Trade Commission (FTC) on how disclosure of broker compensation in the mortgage sector affects consumer understanding of loan costs and choice of loans.² The study examined the effect of disclosure within a controlled experiment. Around 500 recent mortgage customers were shown cost information about two hypothetical mortgage loans and asked a series of questions. Respondents were randomly divided into groups which were provided with different amounts of information about broker compensation. Comparison of the understanding of loan costs and loan decisions taken by respondents in the different groups provided an estimate of the effect of the disclosure. The study showed that the proposed disclosure confused consumers and caused a significant proportion to choose

loans that are more expensive than the alternatives available.

International comparisons and other benchmarking may present an alternative technique to evaluate the impact of a proposed regulation. For example, it may be possible to compare or benchmark market outcomes internationally by comparing market prices in one country with those in another country that has already implemented a similar type of regulation. As well as drawing from international evidence, benchmarking may also work within a country—for example, by comparing the market price of financial products subject to some form of regulation with products that are unregulated but otherwise similar in nature. Any such comparisons depend on the existence of benchmarks, their suitability, and the ability to control for other influences that may explain observed differences in market outcomes.

The different measurement techniques can in principle be employed for all the dimensions of market outcomes that regulation may be improving. However, direct measurement for some dimensions is easier than for others due to differences in the measurability of the relevant metrics.

Considering the list of dimensions and metrics in Table 1, problems tend to arise when attempting to measure the benefits of regulation targeted at improving consumer choices (eg, reducing mis-buying or mis-selling of financial products). This requires judgements about the optimality of consumers' purchasing decisions at the time that the decision was made. How suitable are current choices, what would be more appropriate choices considering consumer needs, and by how much (in monetary terms) would consumer welfare increase if choices improved? Even *ex post*, it would be difficult to establish whether an adjustment in consumer choices as a result of regulation had actually contributed to improving the fit between what consumers purchase and what they really need.

Other metrics of market outcomes are more suitable for direct measurement. For example, reductions in market prices due to a lessening of market power or lower transaction costs are observable, and the resulting benefits can be quantified in monetary terms using measurement techniques commonly adopted by economists. Similarly, reductions in search costs can be measured by gathering data on the time and effort spent by consumers when making financial decisions and purchasing products.

Benefits resulting from reductions in risks can also be directly measured, at least on an *ex post* basis. For example, the rate of operational failures can be compared before and after the implementation of a

regulation to provide inferences about reductions in operational losses. Where such losses are borne by the firm or the firm's insurance, the benefits would not take the form of reductions in consumer losses but price reductions (assuming that the savings at the level of the firm are passed on); again, price reductions should in principle be measurable. As regards financial risks, improvements in market outcomes may also be directly measurable provided a sufficiently long history of data is available to identify whether there has been a significant reduction in firm defaults and losses following regulatory intervention. The benefits resulting from a lower risk of systemic failure, however, are difficult to measure: how likely is it that a systemic failure would have occurred in the absence of intervention, and how severe would the failure have been in an unregulated environment? Even ex post, the absence of a systemic failure does not inform about the benefits of regulation because failures may also not have occurred in the absence of regulation.

Overall, while benefits measurement should aim to directly quantify improvements in market outcomes that flow from regulation or a specific rule, direct measurement can be difficult because, for example:

- predictions are required;
- market outcomes depend on a large number of factors, which cannot always be controlled for to isolate the impact of regulation;
- where the regulation is in place, the data on what the outcomes were prior to its introduction may not exist;
- some of the relevant dimensions of market outcomes are inherently hard to measure and/or quantify in monetary terms.

The indirect route to measurement

Where direct measurement is not possible, benefits can be assessed indirectly. This involves the identification and measurement of proxies which are themselves good and robust indicators of changes in the desired market outcomes. The overall approach to indirect measurement is illustrated in Figure 1. Beginning with identifying the market detriment that regulation or a specific rule is supposed to mitigate, the next step is to consider the mechanisms or process by which regulation is likely to deliver the desired change in market outcome. Indirect measurement refers to quantifying 'intermediate' improvements somewhere along the process. The final, important, step is to confirm that the chosen proxies are suitable for drawing inferences about improvements in market outcomes.

Consider as an example the introduction of a rule requiring firms to disclose detailed information about product characteristics. This rule has the potential to

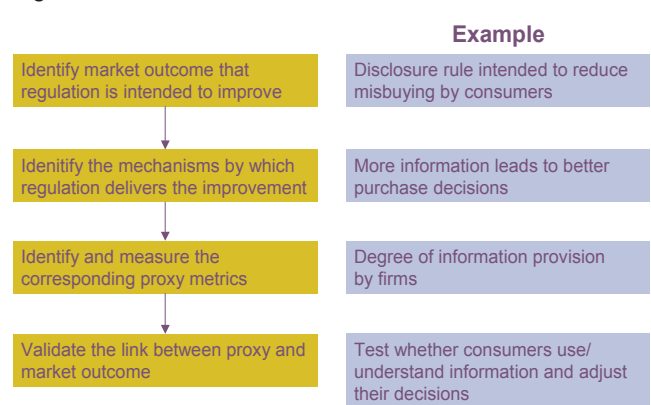
improve market outcomes by enabling more informed consumer purchase decisions. Direct measurement (eg, via consumer surveys) would focus on quantifying the extent to which the regulation ensures a more optimal fit between what consumers need and what they in fact buy, and the value consumers derive from the better purchase fit. This may be too difficult, so the alternative would be to measure benefits using proxy metrics, one of which may be the degree of information provision by firms. So rather than directly measuring the extent to which a disclosure rule induces consumers to make better choices, measurement would instead evaluate the extent to which the rule improves the quantity/quality of information provided to consumers.

The distinction between direct and indirect measurement using proxies is important. Existing cost-benefit analysis often evaluates benefits by considering changes in metrics that are in fact proxies rather than market outcome measures. In the absence of any discussion of the rationale for the chosen proxies, or of a validation of their suitability, there is a risk that the estimated improvements generate incorrect inferences about ultimate benefits.

In the example, the proxy metric—eg, the number of customers given the right information—is measurable and is also reasonably predictable. However, it is only a good metric if there is a clear causal link between proxy and market outcome—ie, if more and better information improves consumer purchase decisions. Hence, it is important to confirm that the chosen proxies are suitable for drawing inferences about improvements in market outcomes.

Numerous metrics are available as potential proxies in benefits measurement. A good starting point for identifying suitable metrics is to 'unpack' the mechanisms by which regulation or a specific rule can be expected to work—ie, what are the underlying sources of detrimental market outcome, and how does regulation address the

Figure 1 Illustration of indirect measurement



Source: Oxera.

problem? If the underlying sources of market detriment are a combination of market failure, risks and/or incentive problems, proxies can be metrics which:

- reflect the degree of underlying market failure;
- relate to the frequency and impact of risks or the underlying drivers of risk; or
- indicate the incentives of participants in the market.

In this case, measuring the benefits of regulation involves quantifying how far regulation has (ex post) or will (ex ante) mitigate the market failure, reduce risk or improve incentives.

Proxies may also come from firm-level data. For example, it may not be possible to directly measure the impact of a rule on consumer choices, but it is relatively easy to ask firms whether the rule is likely to impact on their product offerings. Similarly, if it is difficult to directly measure whether a regulatory intervention has reduced the costs or expected consumer losses from default risks, assessing the improvement in a firm's financial position can provide useful proxy information.

Proxy measures may also be based on past regulatory interventions. A new rule may be similar in nature to a regulation that has previously been introduced and evaluated in another market or context. Evidence on benefits obtained in the past can then be used to proxy the likely benefits that the new regulation can be expected to deliver.

Validation to assess the suitability of the chosen proxies may require measurement, or prior knowledge that the links between proxies and market outcomes are valid in practice. There is no guarantee that the regulation examined only has an impact via a single chain of causality and only affects a single dimension of market outcome. There may be impacts (both positive or negative) in addition to the intended impact, affecting dimensions of market outcome other than the desired one. This means that, in addition to tracking the primary links that lead from a regulation to the desired change in outcome, other plausible chains of causality should also be explored and, if significant, evaluated.

Concluding remarks

Benefits measurement is a complex exercise in practice, more so than measuring the direct costs of regulation. The framework developed does not hide these complexities, but seeks to improve measurement by systematically describing the benefits that should be measured, and the direct and indirect approaches available to achieve measurement. Moreover, by emphasising the impact of regulation on market outcomes (for direct measurement), and by making explicit the mechanisms or chains of causality through which regulation is expected to deliver improvements in market outcomes (for indirect measurement), application of the framework should improve not only actual measurement but also policy formulation. As such, the framework can be integrated into all parts of the policy-making cycle.

¹ Market failure analysis limits the dimensions of benefit to those that relate to delivering an economically efficient outcome. Depending on the regulator's distributional objectives, an eighth dimension of benefit can be added to capture these, as has been done under the heading 'Financial exclusion' in Table 1.

² Lacko, J.M. and Pappalardo, J.K. (2004), 'The Effect of Mortgage Broker Compensation Disclosures on Consumers and Competition: A Controlled Experiment', Federal Trade Commission Bureau of Economics Staff Report, February.

If you have any questions regarding the issues raised in this article, please contact the editor, Derek Holt: tel +44 (0) 1865 253 000 or email d_holt@oxera.com

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