

# Effective capital management: Economic capital as an industry standard?\*

## Contents

- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

## Executive summary

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

## PricewaterhouseCoopers Global Financial Services Briefing Programme

Welcome to the 13th report in our global financial services briefing programme, entitled **Effective capital management: Economic capital as an industry standard?**

This briefing, written in association with the Economist Intelligence Unit, examines the use of economic capital by financial services institutions: how far have institutions gone in implementing economic capital and what impact has its adoption had on decision-making within the business?

The research effort for this briefing comprised two global initiatives:

The Economist Intelligence Unit held over 21 one-on-one interviews with senior executives at financial institutions in Asia, Europe and North America.


The Economist Intelligence Unit and PricewaterhouseCoopers conducted a special online survey of senior executives in financial institutions on the subject of economic capital. Executives from over **200 institutions in Asia, Europe and the Americas** participated in the survey, which was conducted during October and November 2005.

The interviews and survey findings were further supplemented by significant desk research.

Within this series of briefings we previously addressed the same issue in 2002 when we published **Economic Capital: At the heart of managing risk and value** and this new briefing looks at how risk-based capital management has evolved.

I am confident that you will find this briefing thought-provoking and insightful. Soft copies of this, along with our previous briefings on **Wealth Management, Economic Capital, Risk Management, The Trust Challenge, IFRS, Compliance, Restructuring, Governance, Performance Improvement, Growth and Offshoring**, are all available free of charge from our web site [www.pwc.com/financialservices](http://www.pwc.com/financialservices)

If you would like to discuss any of the issues addressed in this briefing in more detail please speak to your usual contact at PricewaterhouseCoopers or to one of the editorial board members listed on page 28. We would also appreciate your feedback as it helps us to ensure that we are addressing the issues that you are focusing on.



**Jeremy Scott**

Chairman, Global Financial Services Leadership Team

## Executive summary continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Financial services may be an industry built on an understanding of risk, but examples abound of financial institutions whose shareholder value has dropped dramatically in the face of unexpected events. From the impact of natural disasters such as Hurricane Katrina on reinsurers to the risks facing mortgage lenders of a potential housing crash; from the effect on retail lenders of rising delinquency in consumer loan portfolios to the impact of major shifts in the value of industrial sectors on equity and debt portfolios, a seemingly healthy performance can disguise costly vulnerabilities. **So should the financial services industry link the capital required to generate a certain level of profit to the risks they run in doing so?**

Yes, says a growing proportion of the financial community. A survey of more than 200 senior executives at financial services institutions, carried out for this briefing by the Economist Intelligence Unit, reveals that 44% of institutions questioned are already using economic capital – a way of quantifying how much risk of unexpected loss a firm has assumed or is inherent in its business – either across the enterprise or within certain business units. A further 13% have plans to introduce economic capital within the next 12 months.

Not everyone is convinced. A significant minority of respondents (25%) have no plans to adopt economic capital at all – half of them cite a lack of regulatory pressure as the reason, and a third are sceptical about the value of implementing economic capital, given the difficulties of collating and modelling data on infrequent and

often intangible risks at extremely high levels of certainty. Some US banks in particular worry about the importance of operational risk, which is notoriously hard to quantify.

The weight of responses to our survey is significant, however. They suggest that economic capital is fast gaining critical mass within the industry. The regulators undoubtedly provide an important impetus for many in the industry. Basel II, a new regulatory standard for internationally active banks, is due to be phased in from 2007-2008 throughout developed markets such as the European Union, and somewhat later in the US (which is likely to implement it in 2009 at the earliest) Solvency II, a similar standard for insurers in the EU, is expected to be in place by 2010. Both provide economic capital with a powerful tailwind.

Many institutions also recognise the potential of economic capital as a business tool. The top reasons given by respondents for their adoption, or planned adoption, of economic capital are to improve their strategic planning, define their appetite for risk and set their risk limits. ‘Unless you have a complete understanding of risk, of the dimensions of credit, market and operational risk, then you don’t know the capital that you have to allocate to the various aspects of your business,’ explains Michael Ullmer, Director, Finance and Risk, of National Australia Bank. He goes further: ‘And unless you have an understanding of the financial and business performance, then you don’t know what returns you’re getting on the capital that’s been deployed.’

## Effective capital management: Economic capital as an industry standard?

### Executive summary continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

That, at least, is the theory. In practice, it is clear from the results of the survey that many managers are failing to exploit the full business value of economic capital:

- Responsibility for managing economic capital too often rests with the risk management function rather than with the business units. Levels of understanding about the business applications of economic capital among senior management consequently vary greatly between institutions;
- For economic capital to change business behaviour, an awareness of risk needs to be an integral part of organisational culture. Yet risk-adjusted performance measures are only infrequently being used to drive compensation for senior managers and business unit heads, and risk and financial reporting often remain separate; and

- The results of economic capital calculations are being disseminated patchily within the organisation and rarely get reported externally (with the exception of top-tier banks, where economic capital disclosures are in more widespread use).

'In the right hands, economic capital, or risk-based capital management, is a powerful management tool,' says Phil Rivett, a member of PricewaterhouseCoopers' Global Financial Services Leadership Team. 'To work to best advantage, it requires openness throughout an organisation and needs embracing by those at the top. The evidence, so far, is that too few senior managers are making the leap.'

#### The implementation agenda

Economic capital is neither a panacea nor a substitute for effective leadership and competent management. But it can be a valuable weapon in the managerial armoury of financial and non-financial metrics if a few basic rules are followed:

- 1. Integrate.** Mesh economic capital into your management and reporting structure. Management teams at business unit level should be formally responsible for using economic capital as a tool for running the business and for gaining a better understanding of its risk-adjusted returns. At the moment, the survey respondents rate risk managers as more knowledgeable about the business uses of economic capital than senior managers throughout their organisation.

Continued overleaf

Executive summary continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

The implementation agenda continued

**2. Motivate.** Set key performance indicators and compensation to reflect risk-adjusted returns rather than absolute returns.

Changing compensation structures in this way is no easy task but it is critical. Survey respondents see the integration of economic capital into management decision-making processes as the biggest implementation challenge they face.

Establishing KPIs that are widely accepted within the organisation and linking pay to risk-adjusted performance are the most effective ways to overcome this barrier.

**3. Communicate.** Share results externally with ratings agencies and shareholders. Economic capital may not lead directly to a ratings upgrade or a buy recommendation but it should lead to more informed and transparent relationships. Communicating outside can also help to change attitudes internally. Further efforts are also required on the part of rating agencies and shareholder groups themselves if they are fully to understand the benefits of economic capital.

**4. Be pragmatic.** Each institution is different and has its own set of priorities. So tailor the model to your own needs. As Erik Ohman, Head of Group Planning and Control of Nordea Bank says: 'Economic capital is not something you can simply cut and paste.' And be realistic from the outset about how much can be modelled and what the challenges of implementation are.

**5. Recognise economic capital's limitations.** Use economic capital as one instrument among many. No sensible management or risk management strategy will boil down to a single number or single process. 'It is one tool among others that gets you closer to a firm's economic return,' says Herve Geny of Moody's Investors Services, a ratings agency. What economic capital can do, however, is to help define an organisation's overall risk appetite and ensure that any decisions that go beyond normal risk limits are made transparently and with forethought.

## The regulatory case for economic capital

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Regulatory initiatives are one reason why the cause of economic capital is gaining momentum. The Basel Committee on Banking Supervision adopted a Framework that ties the amount of capital needed by banks to the weighting of certain types of risk and to the chances of unexpected losses.

Although Pillar 2 of the revised Framework stops short of naming models based on economic capital (see box, The three pillars of Basel II overleaf), most regulators make no bones about their desirability, both because the resultant capital charge should reflect a bank's own estimate of risk, helping to reduce regulatory arbitrage, and because economic capital goes beyond a purely quantitative view of risk and provides a perspective on the quality of risk management at individual institutions.

The revised Framework encourages larger institutions to implement their own internal ratings for measuring credit risk and to employ many of the principles that underpin economic capital. Although there will still be differences between regulatory capital measurement in Pillar 1 and economic capital systems adopted by banks (in areas such as confidence levels for Pillar 1 credit risk), Jaime Caruana, Chairman of the Basel Committee, has made it clear that economic capital is the model of best practice to which banks, particularly international ones, should aspire.<sup>1</sup>

In the European Union, under the new directive on capital requirements (which codifies the Basel II requirements), banks and other financial institutions are being encouraged to decide on the approach that is appropriate for them and to produce their own internal assessments of capital adequacy. Some 26% of respondents to our survey said that economic capital was required by their national regulators, and a further 39% said that it was expected but not required. Another 25% reported that their regulators encouraged institutions above a certain size to adopt economic capital.

Compared with banks, many insurers have been slower to develop the tools for modelling risk and tying their capital to the results. But they are catching up fast. As with banks and Basel II, insurance companies face a similar hurdle in the shape of Solvency II, a new standard that is to be phased in across the European Union from 2010 onwards. Like Basel II, it seeks to align the amount of capital held by an insurer more closely to various risks and so to provide more security for their policyholders. It too rests on

three pillars, the last of which aims to use the discipline of the market to make insurers more transparent about how they run their businesses and the results they report.

'The need, under new UK regulations starting this year, for insurance companies to make their own formal assessments of risk capital has certainly begun to drive a better understanding of risks and has led to changes in the way business is managed,' says Mark Train, an actuarial partner with PricewaterhouseCoopers in London.

<sup>1</sup> Jaime Caruana, Governor of the Bank of Spain and Chairman of the Basel Committee on Banking Supervision: 7th HKMA Distinguished Lecture, 'Basel II – Back to the Future', Hong Kong, February 2005.

## The regulatory case for economic capital continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

### The three pillars of Basel II

The limitation of the Basel I Accord on capital adequacy, which was introduced in 1988, is that it applies a flat capital requirement of 8% on nearly all private sector assets (loans) and a 4% requirement on all residential mortgages. That means the amount of regulatory capital that banks are required to hold on assets is often more than the amount of capital needed to cover the real risk of the asset, and vice versa. Result: banks find themselves indulging in so-called regulatory arbitrage – shedding high-quality assets while keeping riskier ones on their balance sheets.

Basel II, which is to be introduced in most markets from 2007-2008, aims to tackle this problem by aligning regulatory capital more closely to economic risk. In other words, it seeks to mandate a stronger link between risk and the capital required to bear it. This ties the way that regulators look at risk and the need for solvency more strongly with the way banks themselves treat risk and the capital needed to support it.

Basel II rests on three pillars. Under Pillar 1, which is purely quantitative, banks and other affected institutions will have to satisfy regulators that they have set aside enough capital to cover a range of credit, market and operational risks. Most international financial institutions are likely to adopt what is known as an internal ratings-based (or IRB approach) to credit risk – in other words, they will be expected to establish their own internal ratings for assessing such risks.

Pillars 2 and 3 are also challenging, albeit in a different way from Pillar 1. Pillar 2 requires an assessment by the bank of how much capital it thinks it needs to hold against a range of other hazards such as interest rate risk in the banking book; business, strategic and reputational risk; and changes in the business cycle. Under Pillar 2, institutions also have to demonstrate to their supervisors that they manage their capital in line with their profile for risk. The capital allocated can be supplemented or even over-ridden by the supervisor's assessment of the same risks and

how the organisation is seen to be managing them. Pillar 3 focuses on disclosure and market discipline.

In the US, only the largest banks will be subject to Basel II and even then the timetable for implementing it is uncertain. In the European Union, by contrast, all banks, securities firms and investment management companies (but not insurance companies) will be required by law to adopt the Capital Requirements Directive<sup>2</sup>, which is based on the Basel II Framework. As in the US, most of the biggest will opt for the IRB approach; the medium-sized and small institutions are more likely to use a simpler, standardised model that will rely partly on ratings assigned by agencies (although a number of them are also planning to adopt an IRB approach). Banks in Canada, Japan and other parts of Europe, which are also members of the Basel Committee, are expected to follow a similar timetable to the EU. Regulators in Australia, South Africa, many other parts of Asia and Latin America have also said they intend to adopt Basel II.

<sup>2</sup> The Capital Requirements Directive for credit institutions and investment firms, approved by the European Parliament on 28 September 2005 and adopted by the Council of Economic and Finance Ministers of the European Union on 11 October 2005.

## The business case for economic capital

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Regulatory pressures alone do not explain the increasing adoption of economic capital, in any case. The business applications of economic capital are arguably much more important, even if, as some observers suggest, it may take pressure from regulators to force some institutions to adopt it. Asked to identify the parties that have been most instrumental in driving economic capital forward at their organisations, survey respondents put senior management and the risk management function well ahead of regulators.

For many institutions, economic capital's value lies in its business applications rather than its regulatory ones. Survey respondents believe that economic capital is more valuable to their business in helping to define their appetite for risk and set risk limits rather than as a means of meeting regulatory capital requirements. Over 95% of respondents who have implemented or plan to implement economic capital have either already achieved, or expect to achieve, a better allocation of capital than under a regulatory capital model.

CIBC, a Canadian bank, uses a 'principal investor' approach to evaluate the performance of each of the bank's 35 business units. One of the key indicators of a unit's performance is economic profit. This is then linked directly to the economic capital that the unit will require in the future. Divisions that are strategically important and hungry for capital use their economic profit as a starting point when requesting additional resources.

'The system gives the head of each division the ability to go to senior management and ask for additional capital to help their business grow,' says Brian O'Donnell, the bank's Treasury and Risk Management Chief Financial Officer. The same process extends, almost desk by desk, throughout the bank, particularly for wholesale businesses.

CIBC switched to a system based on economic capital several years ago because of the limitations of Basel I. Like other international banks, it realised that a simplistic approach to risk under the original Basel Accord was neither a suitable yardstick by which to allocate capital in the long run, nor a reasonable way to run a forward-looking business. According to Mr O'Donnell, the bank has not once regretted the decision.

Another institution that has employed a measure of economic capital since it was founded more than a decade ago is Capital One, a US-based

bank specialising in retail lending and credit cards. According to Geoff Rubin, the company's Finance Director, there are few areas of the bank where a risk-adjusted measure is not used in order to allocate capital to business units.

Among other things, an economic capital approach can be used to assess the risks inherent in new products and to price them from market to market. Over 10% of survey respondents have already discontinued underperforming products as a result of the insight provided by the calculation of economic capital; almost 20% of the respondents have made changes in their pricing policies. Customers too can be analysed from a risk-adjusted perspective. 'The cost of capital used in individual businesses has to be recovered,' says David Townsend, Head of Risk Management and Reporting at Standard Chartered. 'Economic capital helps you to rate customer relationships.'

The business case for economic capital continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Institutions also use economic capital to capture the benefits of diversification in their estimates of the capital required – the fact that an institution with a spread of businesses is less likely to be caught on the hop than one which specialises in a particular type of lending – in order to free up capital for use elsewhere in the business. Most banks offset the different levels of risk between, say, private banking and investment banking to arrive at an overall level of economic capital required.

Some institutions use this liberated capital as an opportunity to remind business units of the benefits of being part of a group – savings are handed back to the centre and then re-distributed pro rata according to the units' existing allocation. Other institutions take a different approach and hold the excess capital until a specific, deserving project comes up. This tactic avoids skewing the metrics of other business units.

## European Embedded Values

It is not just bankers and their regulators who are moving towards more consistent and transparent ways of reflecting risk. Life assurance companies are too. The chief financial officers (CFOs) of some of Europe's largest insurance and life companies have worked together to produce a new set of principles known as European Embedded Value (EEV).

From this year, EEV aims to dispel most of the secrecy and subjectivity involved in arriving at traditional embedded values – the capital value to an insurer of what are known as 'in-force' life policies. Until now, the value of in-force policies has been calculated by actuaries using rates for discounting risk premia based more on opaque judgemental methods than objective market-based ones. Many observers have criticised the use of cash-flow projections to reflect the higher return from riskier assets, when it is often unclear whether the discount rates used allow for the risks involved in investing in these assets.

To help make life simpler and clearer for everybody, the CFOs have produced a series of guidelines which aim not only to cast more light on the assumptions that underlie the calculations but, importantly, on the values placed on financial options and guarantees within the insurance contracts. The cost of these must now be explicit and deducted from the value of 'in-force' policies.

The main difference between these values and values calculated in the traditional way is that those who elect to use them can choose to employ discount rates drawn openly from the market and will need explicitly to allow for the cost of holding any required capital. The use of EEV and corresponding disclosure will shed light on how insurers do their sums to arrive at their capital values. Because different types of risk are taken into account when they are calculated, European Embedded Values will also encourage firms adopting them to employ a form of economic capital.

Continued overleaf

The business case for economic capital continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

European Embedded Values continued

'In many ways,' says Philip Moore, Group Finance Director of the UK's Friends Provident, 'the new numbers for European Embedded Value are the fruit of the work that we have put in on economic capital.' Indeed, Friends Provident – like many of the European insurers that have elected to adopt the new methodology – already uses a form of economic capital to calculate the risk-adjusted returns generated by its businesses.

France's AXA is among those firms planning to report their results for 2005 using European Embedded Values. The new standard is a

natural progression for companies like AXA, which has employed a form of economic capital for the past five years, says Denis Duverne, the company's Group Chief Financial Officer.

He sees a natural synergy between the adoption of European Embedded Values and the aim for greater transparency under Solvency II. 'Supervisors and insurers are all pushing in the same direction. From the outset we have shared with the regulator and the rating agencies the results of our modelling for economic capital. This has been a source of comfort for everyone concerned,' says Mr Duverne.

## The limitations of economic capital

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Not every institution is convinced by the case for economic capital. A quarter of the survey respondents have no plans to adopt economic capital at all. Half of these respondents cite a lack of regulatory pressure on their own institution as one of the reasons, many of them because they are not large enough to be caught up in the regulatory spotlight. But there are more fundamental objections too – almost a third of non-adopters are sceptical about the value of economic capital itself, a view shared by a number of household names. They argue, for example, that economic capital relies on heroic assumptions or that models based on historic data may provide misleading insights into the future.

Problems of data integrity also loom large. ‘A model is only as good as the underlying data,’ warns Mr Moore of Friends Provident. ‘Garbage in, garbage out’ was the more succinct verdict of one survey respondent. The difficulty of quantifying less tangible risk types preoccupies many executives, particularly in sectors such as private banking, whose capital requirements are less bound by conventional measures of credit and market risk. The lack of accepted industry standards for calculating economic capital, a factor that also inhibits the spread of external disclosure (see next section), is another limitation.

Almost without exception, those executives we spoke to for this briefing also cautioned against a temptation to entrust economic capital models with blind faith. By their very nature such models rely on assumptions that can skew the

results if they prove wrong. When it comes to modelling for risk, the consequences of such errors can be disastrous.

‘What most people are learning is that there is not one, perfect number,’ says Mr O’Donnell of CIBC. ‘You don’t limit yourself to one number.’ Dr Rubin of Capital One also warns against a presumption that a capital buffer can replace active and sensible management. ‘Risk capital is not risk management. You need to have both,’ he says. The main thing is not to create a black box which most people don’t understand,’ agrees Mr Ullmer of National Australia Bank.

Laura Santori, an analyst with Standard & Poor’s, particularly worries that insurance firms may become too reliant on the increasingly sophisticated models for assessing risk that have been developed in recent years. ‘There is definitely a danger that, if everybody makes the

same assumptions and uses similar models, then they may make the same or similar mistakes,’ she says. Standard & Poor’s plans to probe European insurers on the models they use and the assumptions that underlie them and will then decide whether it can rely on the firms’ own findings or whether to develop its own parallel models over time.

Some banks worry, too, about the fondness of some regulators for stress testing, both as a way of determining an institution’s potential losses (and therefore its need for additional capital) but, more importantly, as a substitute for other forms of analysis. ‘It is concerning to see the weight placed by some on the results of stress testing,’ says Eric Reiner, Managing Director, Group Risk Control of UBS. ‘It has a role to play but not to the exclusion of everything else.

## The limitations of economic capital continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Because there are few common standards when it comes to risk, it is important that each institution map out how best to run its business within its own appetite for risk. 'This is why it is common to link bottom-up economic capital calculations with top-down approaches such as earnings volatility analysis and scenario modelling,' says Richard Barfield, Director in the Valuation and Strategy Group with PricewaterhouseCoopers in London.

### Case study: Commonwealth Bank

The Commonwealth Bank of Australia's economic capital programme began some seven years ago, and has evolved over time as the model has become more robust and populated with more and increasingly reliable data. It now has been developed to take into account not only market, credit and operational risk, but also the insurance risk the bank takes on as an underwriter of mortality and morbidity risk within its significant wealth management portfolio.

The riskiness of each business unit, as determined by the economic capital model, is one of a number of factors that determines the allocation of capital within the bank, says Mick Leonard, Executive General Manager, Group Risk Management.

'In my view economic capital is one of a number of measures needed to guide the business, particularly from a strategic perspective,' he says. 'The market doesn't

necessarily judge us on total shareholder return, including risk-adjusted capital. It judges us on return on equity or our yield.'

If a bank were to make all its decisions based on economic capital calculations, it may never enter into any new markets. 'Strategically we may want to make an acquisition of a business that may have very poor initial risk-adjusted return on economic capital, but that we feel we should be in strategically due to future potential growth opportunities – it could be a particular client segment, for example, or geographic region that is set to grow,' says Mr Leonard. 'And although it may not meet our normal hurdle at the outset, you have to look at the longer term.'

Mr Leonard says that an economic capital measure will never be the 'one and only' performance measure. 'But from a strategic and a tactical point of view it helps our business unit managers understand the capital impact from a risk point of view of a particular product or a line of business or an acquisition.'

## Maximising the value of economic capital

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

The dangers of over-reliance on any one number are underlined by the fact that in many firms, responsibility for economic capital is dominated by risk managers or other specialised staff. Risk managers and specialist economic capital teams have primary responsibility for measuring economic capital in almost three out of five responding institutions. This is all well and good but problems arise if they are also mainly responsible for managing economic capital and are the only ones who understand it.

Asked to rate levels of knowledge about economic capital within their organisations, almost 60% of respondents regarded their risk management teams as extremely knowledgeable about the methodology behind economic capital, well ahead of most other groups. The risk management team is also seen as the most knowledgeable group when it came to the business applications of economic capital. Only 11% of respondents said that their board of directors was extremely knowledgeable on the subject, and only 14% and 30% said that business heads and senior management, respectively, were extremely knowledgeable. (When people in the risk function are removed from the survey sample, the scores for other functions barely move.)

Other survey findings reinforce the message that the challenge of integrating economic capital with decision-making by management – seen by respondents as the single biggest barrier to successful implementation – is not being properly met. The task is to strike the right

balance between technical sophistication and the use of economic capital as a practical business tool that can be embedded within the organisation.

- More than half of those questioned reported that their firm has adopted, or intends to adopt, economic capital as a way of assessing the risk-adjusted performance of their business units. Yet only 10% of respondents said that business units have primary responsibility for managing economic capital at their organisations, which indicates that incentives to embed the concept in business models are limited;
- Only 30% of those questioned in our survey say that risk-adjusted performance is used as the basis for key performance indicators and schemes for incentivising their senior management (see box, Lawrence's lore); and

- Only 35% maintain one set of integrated systems for financial and risk reporting. Even in institutions that have adopted economic capital across the enterprise, 25% of respondents say the heads of business units either do not receive the economic capital results at all or only get them on an ad hoc basis.

Transferring authority for economic capital where possible to the individual business units helps to mitigate the risk of a 'black box' approach to risk measurement, and boosts the chances that economic capital will become a valuable tool for management. Tim Thompson, Head of Risk Measurement and Reporting at Barclays, is clear that the benefits of economic capital derive from its adoption throughout the organisation. 'We don't believe that economic capital is something that should be calculated and introduced from the centre. We provide every division with the tools to calculate their own numbers which are then reviewed and, where necessary, challenged from the centre.'

Maximising the value of economic capital continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Like other international banks that base decisions on a measure of economic profit, Barclays regularly simulates as many as 330,000 individual borrowers on its wholesale banking book and does the same for every new loan that is granted. Because they are more homogenous, retail loans are measured in batches. The results are then fed back into a division's model and signed off every three months by the manager responsible.

Many banks differ in their attitude to how far down the management structure they can usefully push the use of economic capital but the importance of involving decision-makers throughout the enterprise is widely accepted. ABN Amro advocates a pragmatic approach. According to David Korslund, an Executive Vice President with the bank, the risk of conflict with the centre is greatly reduced by involving business units at the outset and by being flexible about their needs as well as those of the group as a whole.

Nordea, the product of a four-way merger between Nordic banks, found that there was some resistance to the introduction of economic capital among certain relationship managers. 'We sympathise with their point, particularly if the numbers come up negative, but they should also realise that there is a cost to the business as a result of potential losses from the loans they make,' says Mr Ohman, of Nordea.

## Lawrence's lore

Mark Lawrence has strong views on the efficacy of economic capital as a management tool. Mr Lawrence was named Risk Manager of the Year by Risk magazine in 2002 for a 'scorecard' he developed to measure operational risk at ANZ, a bank of which he was then Chief Risk Officer. A bank can have a perfectly competent quantitative analyst sitting in an office with an Excel model working out complex equations, he says, but regardless of the accuracy or not of that model, unless the results of that analysis are integrated into the bank's performance-management system, and the remuneration of key executives, it won't make a blind bit of difference.

'Either the chief executive of the bank is willing to commit to going down a path called risk-adjusted performance management or not,' says Mr Lawrence. 'The key differentiator is whether you are going to believe in the philosophy of risk-adjusted return enough to commit at the inception of the journey to build it into a performance-management framework.'

If the bank commits from the beginning, then the system will develop in a different way, says Mr Lawrence, because the heads of the business units will be vitally interested in how the model works, whether it accurately reflects the riskiness of their business or, crucially, what actions they can take to reduce their charges.

Before he arrived in 1999, ANZ used a system that calculated economic capital for operational risk based mainly on a proportion of operating costs. It was a basic system, but one that had been supported by ANZ's various business units which, since 1997, had been assessed (and remunerated) on the basis of their risk-adjusted performance using the bank's system of economic capital. But the system introduced distortions into the operational risk management system: it provided results where costs were disproportionate to operating risks; managers found they could cut the charge relating to operational risk by cutting their costs; and it gave little idea of how operational risk was likely to develop in future.

Continued overleaf

## Maximising the value of economic capital continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

### Lawrence's lore continued

Mr Lawrence and his team developed a system to replace it, using a 'heat map' that measured 13 types of operational risk such as fraud, modelling error, process and personnel. Each of these was given a weighting in ANZ's core business lines in order to generate an allocation for operational risk capital that fitted within the bank's broader system of economic capital.

Because ANZ had already used economic capital to manage its businesses, developing a more sophisticated system for operational risk was a challenge. 'Not only did I have to be smart about how the system would work,' says Mr Lawrence, 'I also had to get the buy-in of the business heads. They had to support it because it was going to be used to calculate their compensation.'

Unless a system of economic capital is part and parcel of a bank's reward system, he says, it will simply be an intellectual exercise that will make little difference to the organisation's operations.

If firms are failing to realise the full potential of economic capital internally, the same is doubly true when it comes to external reporting. Two-thirds of the responding institutions that have adopted economic capital do not report the results of their calculations to outside audiences. Perhaps, as a result, shareholders are regarded as being least knowledgeable by far on both the methodology and business uses of economic capital. Even when firms do report economic capital externally in their annual reports, only a few respondents to our survey say they include them in rating agency or analyst presentations.

This may be partly because, even among those banks that report on economic capital in detail in their annual reports (such as Barclays, Bank of America and Deutsche Bank), there are no common standards. Some report the numbers by risk category, others by business area, while still others report geographically.

An appreciation of the limitations of economic capital on the part of senior management may also be a significant factor. As Mr Reiner of UBS points out, 'Senior managers themselves need to feel comfortable with certain numbers before they put them into the public domain. They know that, once released, they will have to stand by the data.'

There is still a great deal of uncertainty even among specialist audiences about how to interpret some of the numbers on economic capital. Rating agencies, like regulators, face a difficult task of assessing the assumptions and rigour on which models are based without necessarily being able to replicate them in detail. 'For us, economic capital is not just a number or numbers,' says Herve Geny of Moody's Investors Services. 'It is the process that is important because it forces you to look at all kinds of risk. There should be consistency in the assumptions and in the overall framework that an institution decides to adopt for economic capital calculation and allocation across businesses.'

Colin Church, Chief Risk Officer for Citigroup for Europe, believes that, without further definition by regulators, it may prove difficult to establish the common standards that, in turn, will encourage more institutions to further progress economic capital. Lack of global consistency or more prescriptive clarity around Pillar 2 may well complicate the implementation and realisation of desired benefits. Looking ahead, he also believes that it will be difficult to make the most of the market discipline intended through Pillar 3 without clearly-defined common standards for the external disclosure of economic capital.

Maximising the value of economic capital continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Yet regulators are loath to be too prescriptive. Supervisors worry that, if they interfere too closely in the management of financial institutions, they not only risk losing their objectivity, in the long run they will also make it harder to protect depositors and the financial system at large.

It is fair to say, however, that a greater emphasis is likely to be placed on external reporting of economic capital in future. As Basel II and Solvency II are phased in, financial institutions will have an incentive to change what they hold on and off their balance sheets, which assets they retain and which they choose to securitise. Such decisions will have a direct bearing on the risks that the firms run and therefore on what they should disclose to stakeholders.

Shareholders too can make a difference.

By rewarding those firms who demonstrate best practice, investors can help everybody to raise their game. 'After all,' says Mr Korslund of ABN Amro, 'the underlying aim of all this is to enable us to determine whether we have made adequate returns on the funds entrusted to us by our shareholders.' The good news, according to Mr Thompson of Barclays, is that an increasing number of institutional shareholders are at least beginning to focus on the ramifications of economic capital.

Effective capital management:  
Economic capital as an industry standard?

Maximising the value of economic capital continued



- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

Economic Capital Disclosures at Top 50 World Banks

Banks have been traditionally more active than other financial services companies in disclosing economic capital. PricewaterhouseCoopers has conducted an analysis of the disclosures of economic capital by the world's top 50 bank holding companies, ranked by assets. The findings make for interesting reading.

Approximately 70% of the banks disclose the usage of economic capital as a risk management practice in their annual reports. Moreover, about 50% of banks disclose economic capital results by business units both in their annual reports and quarterly earnings releases. Some 36% report economic capital

by risk type. Geographical differences are notable with top banks from Canada, Germany and Spain reporting economic capital results in all cases.



Source: PricewaterhouseCoopers 2004

## Conclusion

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

The momentum behind economic capital within the financial services industry is significant. A growing number of financial services institutions believe that economic capital management and the disciplines it imposes can lead to concrete benefits for customers and shareholders alike. Basel II and Solvency II will bring regulation more into line with best practice within the banking and insurance industries.

It will take time for economic capital to become a true industry standard, not least because there are significant differences in the assumptions and methodologies that lie behind today's economic capital numbers. Although approaches for market and credit risk are converging, there remain significant differences in practice, and the huge variation in approach for other risks means that it may be another ten or more years before the financial services industry coalesces around a standard that enables analysts, shareholders and others realistically to compare one institution with another on the basis of their economic capital numbers alone.

In the meantime, each step towards the risk-adjusted management of capital not only strengthens the ability of banks and other financial organisations to make a reasonable return for their shareholders but also provides greater safety for depositors. The challenge is

to ensure that the bulk of organisations do more than simply leave economic capital to the risk managers or treat it as an exercise in compliance, but also use the results widely and effectively.

'Using economic capital successfully can involve firms in having to make daunting changes,' says Chris Matten, a partner with PricewaterhouseCoopers in Singapore specialising in risk-based capital management. 'But without changes in the way organisations operate, measure their performance and communicate the results to their stakeholders, the real benefits of economic capital will not be realised.' □

## Appendix: Survey results

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

The Economist Intelligence Unit and PricewaterhouseCoopers conducted a special online survey of senior executives in financial institutions on the subject of economic capital. Executives from over 200 institutions in Asia, Europe and the Americas participated in the survey, which was conducted during October and November 2005. Our thanks are due to all those who participated for sharing their insight with us.

Please note that totals do not always add up to 100 because of rounding, or because respondents could choose more than one answer.

### 1. In which region are you personally based?

Asia-Pacific	39%
Europe	36%
The Americas	20%
Middle East & Africa	5%

### 2. Which of the following best describes your title?

Manager	22%
SVP/VP/Director	17%
CEO/President/Managing Director	14%
Head of Department	13%
CFO/Treasurer/Comptroller	9%
Other C-level Executive	7%
Board Member	4%
Head of Business Unit	2%
CIO/Technology Director	0%
Other	11%

### 3. What are your main function roles? Select up to three.

Risk	56%
Finance	36%
Strategy and Business Development	31%
General Management	20%
Information and Research	12%
Marketing and Sales	9%
Operations and Production	7%
Legal	5%
R&D	5%
IT	4%
Customer Service	3%
Human Resources	1%
Procurement	1%
Supply-chain Management	1%
Other	5%



Effective capital management:  
Economic capital as an industry standard?

Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

4. What area of financial services do you personally work in?

Retail banking	19%
Corporate banking	17%
Investment banking	12%
Investment management/Real estate	9%
Capital markets	8%
Private banking	4%
Life insurance	4%
Non-life insurance	3%
Private equity	2%
Outsourcing services provision	2%
Reinsurance	1%
Other, please specify	18%

5. Does your organisation currently use or have plans to adopt an economic capital allocation? Select one.

We already use economic capital across the enterprise	27%
We have no plans to introduce economic capital	25%
We plan to introduce economic capital within the next five years	17%
We already use economic capital in certain units	16%
We plan to introduce economic capital within the next year	13%

6. If your organisation has no plans to introduce economic capital, why not? Select all that apply.

No regulatory pressure to adopt economic capital	51%
Lack of awareness among senior management	38%
No accepted standards for calculating economic capital	32%
Scepticism about value of implementing economic capital	30%
Current capital allocation system works well	26%
Costs of implementing economic capital processes	23%
Other, please specify	6%

Note: Those organisations who have no plans to introduce economic capital exited the survey at this point.



Effective capital management:  
Economic capital as an industry standard?

Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

7. If your organisation has adopted or plans to adopt economic capital, what are the reasons?

Improve strategic planning	68%
Define risk appetite	65%
Improve capital adequacy	51%
Assess risk-adjusted business unit performance	51%
Set risk limits	51%
Assess risk-adjusted customer profitability	43%
Assess risk-adjusted product profitability	41%
Meet regulatory capital requirements	38%
Improve pricing policies	34%
Improve investor relations	22%
Enhance external reporting	20%
Improve credit rating	20%
Set risk-adjusted compensation	18%
Improve M&A decisions	13%
Other, please specify	2%

8. Which of the following parties has been most instrumental in driving the adoption, or planned adoption, of economic capital at your organisation. Please choose the top three.

Risk management team	54%
Senior management	50%
Regulators	30%
Board of directors	28%
Strategy and planning	19%
Finance team	16%
Shareholders	8%
Business units	8%
Ratings agencies	6%
Treasurer	6%
Peer pressure	6%
Investor relations	3%
Other, please specify	1%

## Effective capital management: Economic capital as an industry standard?

### Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

#### 9. How knowledgeable are the following parties about the methodology behind economic capital?

	Extremely knowledgeable	Knowledgeable	Not knowledgeable
Risk management team	57%	38%	5%
Ratings agencies	39%	53%	8%
Regulators	33%	58%	9%
Finance team	32%	55%	13%
Treasurer	32%	55%	13%
Strategy and planning	29%	58%	13%
Senior management	25%	66%	10%
Board of directors	9%	69%	22%
Business units	7%	58%	35%
Investor relations	6%	57%	37%
Shareholders	4%	29%	67%

#### 10. How knowledgeable are the following parties about the business applications of economic capital?

	Extremely knowledgeable	Knowledgeable	Not knowledgeable
Risk management team	45%	48%	7%
Finance team	34%	49%	17%
Strategy and planning	32%	51%	17%
Senior management	30%	58%	12%
Treasurer	30%	54%	16%
Regulators	29%	50%	22%
Ratings agencies	28%	54%	18%
Business units	14%	52%	34%
Board of directors	11%	68%	21%
Investor relations	10%	50%	40%
Shareholders	6%	33%	61%

## Effective capital management: Economic capital as an industry standard?

### Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

#### 11. Which approach to economic capital is your national regulator taking?

Economic capital is expected but not required	39%
Economic capital is required	26%
Economic capital is encouraged for institutions above a certain size	25%
Economic capital is not an area of focus for our regulator	10%

#### 12. Does your organisation use, or plan to use, economic capital to meet the requirements of Pillar 2 of the revised Basel framework?

Yes	84%
No	16%

#### 13. Who has primary responsibility for calculating and monitoring economic capital at your organisation?

Risk management team	50%
Group finance	18%
Group treasury	10%
Specialist economic capital team	8%
Strategy and planning	8%
Business units	2%
Other, please specify	4%

#### 14. Who has primary responsibility for managing economic capital at your organisation?

Risk management team	33%
Group finance	24%
Group treasury	14%
Business units	11%
Strategy and planning	9%
Specialist economic capital team	5%
Other, please specify	4%

#### 15. Which risks are included in your economic capital calculations? Select all that apply.

Credit risk	91%
Operational risk	80%
Asset and liability management risk	72%
Traded market risk	72%
Liquidity risk	46%
Business/strategic risk	38%
Insurance risk	24%
Reputational risk	22%
Goodwill	14%
Other, please specify	7%

## Effective capital management: Economic capital as an industry standard?

### Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

#### 16. Does your economic capital system incorporate diversification benefits? Select one.

It incorporates diversification benefits between both risk types and business units	28%
It does not incorporate diversification benefits	25%
It incorporates diversification benefits between risk types	23%
Don't know	11%
It incorporates diversification benefits between business units	8%
Other, please specify	5%

#### 17. Which of the following receives the results of economic capital reports, and how frequently?

	Quarterly or more frequently	Less than once a quarter	On ad hoc basis	Not at all
CFO	63%	17%	11%	8%
Risk management committee	61%	17%	9%	12%
CEO	58%	22%	14%	7%
Finance team	57%	10%	15%	18%
Board of directors	45%	23%	17%	15%
Heads of business units	43%	12%	21%	24%
Audit committee	38%	15%	17%	31%
Regulators	27%	14%	26%	34%
All employees	5%	5%	15%	75%



Effective capital management:  
Economic capital as an industry standard?

Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

18. Please state whether you agree or disagree with the following statements regarding the role of economic capital in performance management.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Risk-adjusted performance based on economic capital is embedded in our management reporting	16%	50%	18%	12%	4%
Strategy and budget setting take account of risk-adjusted returns on economic capital	9%	50%	24%	12%	4%
Senior management KPIs and incentive schemes are all based on risk-adjusted performance	6%	23%	39%	22%	10%
We maintain one set of integrated systems for financial and risk reporting	5%	30%	24%	31%	10%
We do not distinguish between financial and risk reporting	3%	18%	27%	40%	12%

19. Does your organisation report economic capital results externally (other than to the regulators) and if so, how? Select all that apply.

We do not report the figures externally and have no plans to	36%
We do not report the figures externally yet, but plan to	34%
We include them in our annual report	24%
We include them in analysts' presentations	19%
We include them in rating agency presentations	14%
We include them in our quarterly financial results	12%
Other, please specify	6%

20. If your organisation reports its economic capital figures externally (other than to the regulators), to what level of detail does it do so? Select all that apply.

We break the figures down by risk category	46%
We only provide an overall measure of economic capital	35%
We break the figures down by business line	34%
We break the figures down by geography	14%
We break the figures down by product	14%

## Effective capital management: Economic capital as an industry standard?

### Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

#### 21. What do you regard as the major barriers to the successful implementation of economic capital? Select all that apply.

Difficulty of integrating within management decision-making processes	64%
Difficulty in quantifying certain types of risk	62%
Problems of data integrity	59%
Lack of incentives for specific business lines and product areas to co-operate	31%
Lack of in-house expertise	23%
Uncertainty regarding regulators' attitudes to economic capital	23%
Lack of support from senior management	14%
Other, please specify	4%

#### 22. In which of the following areas has economic capital delivered most value to your business? Rate on a scale of 1 to 5, where 1 = Substantial value to the business and 5 = No value at all.

	1	2	3	4	5
Setting risk limits	31%	36%	19%	6%	7%
Defining risk appetite	29%	40%	20%	5%	6%
Improving capital adequacy	17%	38%	26%	11%	8%
Assessing risk-adjusted product profitability	16%	31%	28%	12%	12%
Assessing risk-adjusted customer profitability	15%	36%	28%	10%	11%
Improving strategic planning	15%	49%	19%	9%	7%
Meeting regulatory capital requirements	15%	33%	28%	12%	11%
Improving pricing policies	13%	35%	29%	15%	7%
Improving credit rating	9%	30%	32%	16%	13%
Setting risk-adjusted compensation	8%	16%	34%	20%	22%
Improving investor relations	6%	20%	33%	19%	23%
Enhancing external reporting	4%	23%	36%	17%	20%
Improving M&A decisions	4%	18%	31%	19%	27%



Effective capital management:  
Economic capital as an industry standard?

Appendix: Survey results continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

23. Please indicate whether you have achieved, or expected to achieve, any of the following concrete outcomes as a result of implementing economic capital at your organisation.

	Already achieved	Expect to achieve	Do not expect to achieve
Better allocation of capital than under a regulatory capital model	24%	72%	4%
Redefinition of our organisation's risk appetite	24%	67%	9%
Freeing up of capital for use in the businesses	22%	66%	12%
Changes in the pricing of our products to reflect underlying risk	18%	70%	11%
Change in strategic direction after assessing our risk-adjusted performance	16%	70%	14%
Discontinuation of under-performing products/business lines	12%	66%	22%
Fulfilment of demands of national supervisors	10%	71%	19%
A better credit rating	8%	60%	32%
Changes in our compensation policies	7%	54%	39%
Attracting the right investor profile	6%	41%	53%
Improved record on M&A	4%	33%	63%

## Effective capital management: Economic capital as an industry standard?

### Contacts

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

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## Effective capital management: Economic capital as an industry standard?

### Contacts continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

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## Effective capital management: Economic capital as an industry standard?

### Contacts continued

- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

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## PricewaterhouseCoopers Global Financial Services Briefing Programme



- ▶ Contents
- ▶ Executive summary
- ▶ The regulatory case for economic capital
- ▶ The business case for economic capital
- ▶ The limitations of economic capital
- ▶ Maximising the value of economic capital
- ▶ Conclusion
- ▶ Appendix: Survey results
- ▶ Contacts
- ▶ PricewaterhouseCoopers Global Financial Services Briefing Programme

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