

Risk & Regulation

Magazine of the Centre for Analysis of Risk and Regulation

No 21 Summer 2011

**RISK AND 'POST-BUREAUCRACY'
GETTING THE APPRAISAL RIGHT?
ENTERPRISE RISK MANAGEMENT
CHINA AND GREEN CHEMISTRY
RAILWAY SAFETY
BEYOND THE AEROPLANE
ACCOUNTING REGULATION
SOCIOLOGY OF FINANCE
FINANCIAL REGULATION**

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Editorial

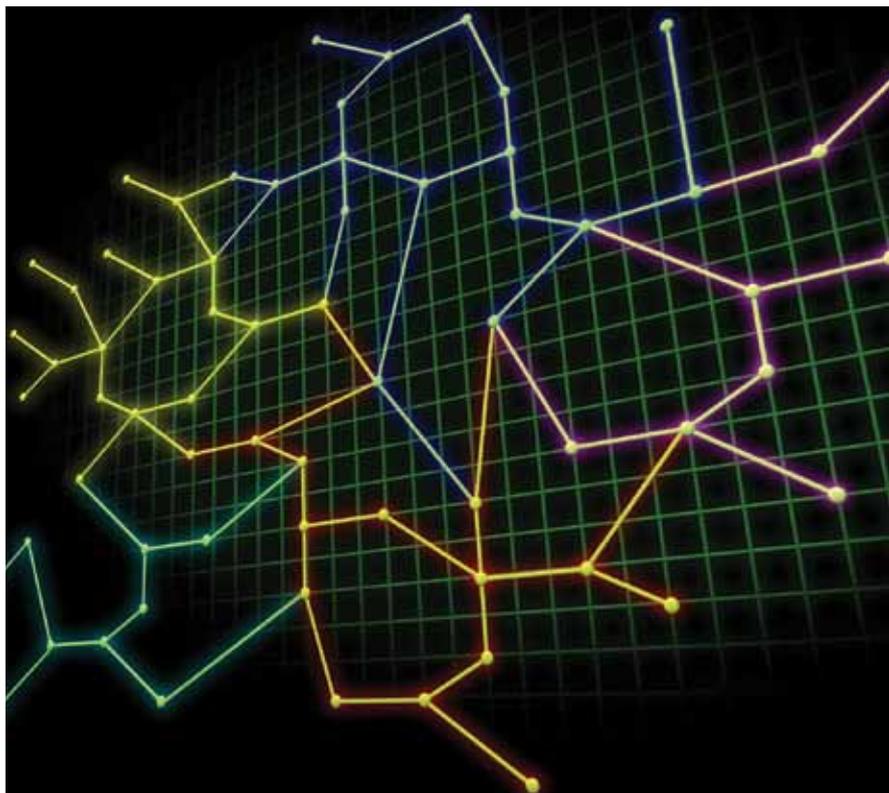
CARR Director **Mike Power** provides a fresh outlook on the Centre's agenda for analyzing risk regulation across different cultural settings and organizational worlds.

Welcome to the first issue of *Risk & Regulation* in 2011. CARR ceased to be an ESRC centre in October last year, but it is still very much in business with a core of research staff, a wide network of associates and doctoral students, and a diverse range of events. My role as incoming Director is to build on the legacy of my predecessor Bridget Hutter and refresh the CARR agenda. One experimental innovation has been the creation of two discussion groups – on resilience and on risk indicators – with others planned. At a time when we are surrounded by so much formality, the aim is to create spaces for informal discussion about issues of common interest. Early signs are that these experiments will at least be enjoyable and valued by those who attend, even if they do not lead to anything concrete or, dare I say, auditable.

In 1999, when the formation of CARR was being discussed, we sought the advice of Sheila Jasanoff at Harvard. I recall her saying, somewhat enigmatically, that CARR would 'become what it is'. I took this as meaning that the character of the enterprise would emerge over time from the efforts of the people who were most closely involved, rather than from any formal mission or strategy statement. And so it has proven. Work in and around CARR reflects our interests in risk management and regulation wherever it occurs. If any of us are sector specialists that is secondary to the goal of comparing and understanding sources of variation in regulation across fields and cultural settings. CARR staff necessarily operate in a larger frame of reference than their own specific interests and, while this is demanding, it makes for work with a broad potential reach.

In many ways, the world has changed and is changing to make the cross-sectoral character of CARR's work even more relevant than before. Regulators themselves are interested in what goes on in other fields. And conversations with policy makers, though anecdotal, reveal a new appetite to learn across regulatory regimes. This is partly reflected in the aftermath of the financial crisis as efforts are made to rethink systemic risk management, drawing in expertise from epidemiology, ecology and other areas. But events like Deepwater Horizon and the Icelandic ash cloud have also revealed the fragility of regulatory knowledge silos. Crises and disasters force us to be epistemologically democratic and pluralistic – which is the only good thing that can be said of them.

This edition of *Risk & Regulation* represents a slight shift in editorial philosophy. We are seeking to populate the magazine with more research digests and thought pieces from practitioners. In this issue, the substantive menu is diverse: air travel, infrastructure projects, railway safety, green chemistry, financial reporting, finance and the financial crisis, post-bureaucracy and organizational risk management. Yet in each essay CARR's central concerns and questions are evident: what is the nature and capability of risk management knowledge? How can this knowledge be organized politically and then governed effectively? How are our organizational



and wider social worlds permeated by risk and what practical designs for its management make sense? In short, how do we make our uncertain futures? If nothing else, the essays which follow provide clear evidence that risk management and risk regulation are not peripheral activities of relevance only to technical experts, but deal with fundamental values and choices about how we wish to live collectively.

Finally, each of the contributions speaks to the difficult practicalities of enacting risk management and regulation. At CARR, we have always been ready not only to produce research papers and monographs diagnosing these difficulties, but also to sit down with policy makers and help them to think through what works. This tradition of engagement may not be sufficient to count as 'research impact' under the new UK proposals for research evaluation, but it is important to us and to those groups of able practitioners who we prefer to regard as partners rather than 'users'.

Mike Power
CARR Director

RISK IN THE AGE OF 'Post-bureaucracy'

Martin Lodge considers the potential risks associated with different visions of the post-bureaucratic age.

We are supposed to be witnessing the dawning of the age of 'post-bureaucracy' – if one is to believe announcements by the UK coalition government. Much faith is placed in technological innovations, especially in information technology, to promote participation and choice. All this innovation supposedly allows for the axing of 'bureaucracy' (if only by promising reductions in civil service numbers). However, the roles these new technologies are supposed to play vary. For some, the 'digital era' allows for reduced administrative costs, for example in areas such as tele-medicine. Others see information technology as a device for reducing participation costs in order to encourage local communities to formulate 'localized' decisions and solutions. Another set of views sees it as a device for encouraging comparison and choice.

That 'post-bureaucracy' is an ambiguous term is hardly surprising. Most political reform attempts are driven by words characterized by contradictory meanings that appeal to distinct constituencies. Special interests wish to attach their particular products and services to reform options. What unites post-bureaucracy accounts is their view of 'bureaucracy' as over-emphasizing uniformity and rule-boundedness.

Post-bureaucracy appeals to three distinct visions of public services and public administration. One, the idea of *participation* in a 'bottom up' style (an idea that has been discussed since at least the 1970s in implementation studies (Ansell and Gash 2008)). Two, the idea of *decentralization* and control through regulatory devices: states 'steer' via franchising and outsourcing. They enrol other actors who do the

rowing in terms of actual 'delivery'. These other actors include charities, third-sector organizations, and others. Third, the idea that public provision should be pushed back and that private firms should supply services which are in demand on the *market*-place. The key problem, however, is not necessarily the ambivalence of the concept of post-bureaucracy. Instead, any attempt to move towards a specific vision of post-bureaucracy is ironically associated with particular and often well documented risks of incurring side effects and perversities.

The first irony is that post-bureaucracy requires bureaucracy. Each one of the three visions of post-bureaucracy above has been discussed for a considerable time and each one of them has been found to necessitate a significant degree of bureaucracy. For example, local participatory network governance arrangements require clear rules and mediation to generate any form of solution. Similarly, a shift from direct service provision towards privately provided services has not only required the development of explicit rules and contracts, but also created its own industry of overseers and regulators. Furthermore, a reliance on third-sector or private sector delivery requires institutional capacity and funding to deliver these services. As a consequence, all of these 'post-bureaucratic' ways of providing public services involve a considerable degree of 'bureaucracy' – be it in terms of rules, in terms of mediation or regulatory capacity, or in terms of public subsidy. In other words, different visions of post-bureaucracy imply a different mix of policy instruments, not a clear-cut shift of the boundary between 'the state' and 'society'. In fact, it has been argued that most 'network'-style governance arrangements represent inherently hierarchical arrangements (Hill and Lynn 2005). More radically, it has been suggested that it is time to 'rediscover bureaucracy' (Olsen 2006).

The second irony is that post-bureaucracy generates its own side effects and unintended consequences.

'The functions of the 'state' in public service provision can be boiled down to the protection of three key values: those of fairness and impartiality, those of efficiency, and those of redundancy and resilience.'

As students of regulation (and public policy) have repeatedly highlighted, any intervention (even if it is the withdrawal of public services) is likely to trigger unanticipated social consequences, whether in terms of impacts on particular groups or in terms of mobilizing particular social groups that either oppose or subvert the intentions of the desired policy change. Undesired side effects require a capacity to respond to emerging challenges. Furthermore, as noted already, previous attempts at 'de-bureaucratization' have suggested that such attempts often have the reverse effect in generating greater demands for rules. Any endeavour to 'set managers free to manage' therefore runs the risk of greater rule-boundedness and reduced discretion.

The same tendency has also been observed in the application of new technologies to monitor the behaviour of subordinates. In the context of the military, the possibilities of using new information technologies to remotely control and 'access' soldiers in the 'fog of war' has reduced the discretion of the military 'on the street' and has added to the demands for accountability and blame management when things go wrong. Such reduced discretion may have its positive and negative effects. Nevertheless, this example suggests that the basic distrust that governs relationships is likely to accentuate one particular utilization of information technology, the one emphasizing greater control and reduced discretion, rather than allowing for greater operational discretion and participation.

The third irony is that participants in discussions of 'post-bureaucracy' also seem blissfully unaware of contemporary debates on good governance and the distinct risks that arise from different values in public administration. The functions of the 'state' in public service provision can be boiled down to the protection of three key values: those of fairness and impartiality, those of efficiency, and those of redundancy and resilience. Fairness, honesty and impartiality seem to be indisputable objectives, and their protection requires at least some degree of 'bureaucracy'. This applies especially to services for the particularly vulnerable.

Questions regarding efficiency point to the effective (or minimal) use of resources to achieve desired policy outputs. If one is to believe in participation and localism as the key themes in post-bureaucracy, then the question arises how 'efficient' these local solutions can be, both in terms of costs arising from the need to negotiate and mediate widely, and in terms of costs of delivering the 'local' solution. Indeed, questions of efficiency raise the wider point about the level of government at which particular policy problems should be discussed, by whom and how.

Finally, redundancy and resilience point to issues about how continuity of service can be safeguarded in cases of interruption and unanticipated meltdowns. Vulnerability in the provision of services can have considerable implications for impartiality and fairness. A reliance on information technology and private service provision places particular demands on ensuring resilience and continuity of service as well as accessibility.

The 'bureaucratic age' was certainly not without its problems, as many studies of 'pathologies' have documented. The three values noted above are likely to be in tension and therefore require difficult trade-offs. These trade-offs are at the heart of risk in public services, regardless of the kind of delivery mode or policy instrument mix. They also require a degree of institutional memory (Pollitt 2009).

Enthusiasts of information technology-driven solutions to all bureaucratic and public service 'evils' need to find answers to the questions raised in this paper. It is a high-risk strategy to believe that all public policy problems can be solved through low-tech 'nudge'-devices, high-tech web-based wisdom of crowds, and casual references to behavioural economics. Public

policies are complex, often 'wicked', raise issues about what kinds of skills and competencies should be available within the public service, and require solutions at different levels of government. A core challenge is how the key values of fairness and impartiality, of efficiency, and of resilience and redundancy can be successfully incorporated into policy domains. Such requirements are likely to generate considerable debate, but they are also likely to allow for more fruitful discussions about the shape of austerity-driven public services than the simple belief in the dawning of some mystical post-bureaucratic age.

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Getting the Appraisal Right?

Rita Samiolo discusses old and new debates on the appraisal of large scale infrastructure, suggesting that 'getting it right' is not all that there is to it.

In the UK and elsewhere, the economic and financial crisis has rekindled discussions about infrastructure. The Treasury's Comprehensive Spending Review is now in the spotlight for reducing public sector demand and contributing to the contraction of the UK economy in the last quarter of 2010. Neo-Keynesian recipes for stirring the economy through infrastructure projects are offered as a solution. An ever-increasing appetite for 'greener' infrastructure, especially in the transport and energy sectors, represents an attempt to compromise between the need to stimulate demand and the need to cut public spending. The hope for a more energy efficient and sustainable economy makes the cost of sustaining today's economy appear more acceptable. Indeed, despite the Comprehensive Spending Review, environmental spending across the Government is going to increase by 21 per cent (Department of Energy and Climate Change: HMT Spending Review Press Release, 20 October 2010).

Attention to the role of infrastructure in fostering development and sustainability has been heightened by the crisis – a 'green new deal' is now demanded – but it is by no means new. Infrastructure has long been seen as one of the most important means to achieve the Millennium Development Goals set by the United Nations in the fight against poverty. Infrastructure projects are invested with the mission to achieve fundamental socio-political objectives. They are expected to benefit the economy, the environment, and society. They are informed by aspirations towards development and sustainability, but also towards transparency and pluralism – both of which go well beyond technical and functional aims. Yet so often infrastructure projects fall short of such ambitions. The practitioner and the academic literature – as well as the press – are full of accounts of failing ventures, incurring large cost overruns and getting the appraisal strikingly wrong.

The calculability challenge

Project appraisals are subject to immense pressure. It is through the numbers produced in such appraisals that high-level and often conflicting aspirations are channelled and translated into concrete investment decisions. It is through cost-benefit analyses and discounted cash-flow analyses, risk assessments, environmental impact statements, and the like that the conformity of projects to their stated socio-economic and environmental goals is negotiated and established. Today, no project would be undertaken if it was not justified by an avalanche of numbers. Such numbers are expected not only to inform policy makers and enable rational decisions, but also to make projects accountable to wider publics. Project appraisal techniques are discussed and developed in attempts to bring infrastructure projects to 'public trial', in the search for transparency and accountability to a variety of stakeholders.

In the last few years, growing and conflicting demands have been placed upon project appraisals. Large-scale infrastructure projects are seen as ventures whose risks can no longer be disregarded and borne by society (ie 'externalized'), and yet whose scale and time horizons defy complete calculation. Risk management is asked to make potential externalities calculable so as to 'internalize' them in the decision making process. The discipline of the market is regularly invoked against the inefficiencies and waste which are so often associated with large-scale infrastructure projects. Even though the state is still expected to play a major role in infrastructure provision and regulation, projects are now required to attract private resources and to display levels of risk and profitability acceptable to private investors. More refined investment appraisal techniques are expected to enable this transition towards profitability and risk-taking by ensuring an economic and financial visibility deemed indispensable for effective investment decisions as well as for controllability and transparency. The boundaries of

the calculable are progressively shifted in attempts to 'internalize' externalities and increase the transparency of decision making processes.

At the same time, infrastructure projects are under increasing scrutiny in terms of their social and environmental effects. The sustainability debate, too, has brought risk management to the fore. Assessments of environmental and social risk are expected to internalize within investment decisions the potential unintended impacts and costs which might otherwise be borne by society. On the one hand, critics of specific projects are often occupied with providing counter-calculations of environmental risk and cost, engaging with the same calculating rationale that produces the impact assessments. In this sense, one side of the environmentalist debate tends to push for an extension of the domain of the calculable. On the other hand, by invoking uncertainty or intangible values like 'community' or 'nature', environmental debates often question, or are simply not concerned with, the possibility of calculating costs and risks and hence of conducting the debate within the sphere of 'rational', calculative decision making. Civil society organizations or environmental groups often claim the right to have a say in technical decisions from a 'lay' perspective. Their concerns are not always translated into rational assessments and risk estimates: in most controversial cases, they appeal to the incalculability of environmental effects and to the uncertainty of scientific evidence in order to support 'lay' and subjective values against the facts provided by experts.

Project appraisal is thus caught between opposing pressures: a drive towards 'better' calculations of risks and impacts on the one hand, and a

preoccupation with the limits of such calculations. Frank Knight's classical distinction between risk and uncertainty, whereby risk is associated with probabilistic calculation and uncertainty with the residual domain of the incalculable, embodies this tension. Notions of uncertainty can mobilize aspirations towards greater calculability, but also hint at a 'beyond' which numbers may be unable to capture and, according to some, should not try to capture. Uncertainty can become a proxy for notions like community, experience, tacit knowledge, or the irreducible 'complexity' of the world. These notions are opposed to technocratic attempts to calculate the 'incalculable'. In such accounts, the logic of risk assessment is often portrayed as serving a technocratic representation of the world to be resisted, while uncertainty is equated with a reality 'out there' in need of protection and political representation.

Through increasingly popular approaches like multi-criteria analysis, multiple stakeholder evaluation, problem-structuring methods, deliberative mapping, and the like, traditional appraisal methods, such as cost-benefit analysis, are being challenged to find new ways of incorporating subjective stakeholder perceptions into evaluation exercises and to blur the boundary between objective facts and subjective values. Calculation remains central to such attempts, but it moves away from a purely monetary dimension towards incorporating quantities that cannot be expressed in currency terms. Subjective values are mapped, categorized, and ranked so as to derive metrics and scales of values which aim at standardizing subjective evaluations and making them comparable.

An epistemology of project appraisal

These new metrics intend to reframe decision criteria along more participatory lines which cut across the expert-lay divide. They share with traditional approaches an aspiration to 'get the appraisal right', yet rightness is equated here more with fairness than factual accuracy. Their primary aim is to promote stakeholder engagement and simultaneously to bring some closure to the debate. They promote conflict resolution. In so doing, crucially, they tend to overshadow a different, less normative, agenda: that of investigating the institutional conditions under

which different ways of calculating emerge and are confronted with each other.

Ways of calculating embed assumptions about the object of calculation and the calculating subject; they are informed by multiple ways of reasoning about both 'facts' and 'rights'. Take the example of the calculation of means and variances required by a risk assessment. The history of statistics has shown that the social acceptability of an apparently 'innocent' calculation like that of an average value requires specific institutional conditions. These include the existence of a unified and legitimate administrative subject performing the calculation, the acceptance of aggregation, ie of the loss of individual specificity produced when a series of disparate characters is replaced by their average measure, and thus the existence of the very idea of 'normality' implied by the use of 'average conditions' to describe the object of the calculation. The average establishes a view from the centre that erases local variety and differentiation. Whether this is accepted or not and the very terms of the calculation will depend on the prevailing ways of conceptualizing the centre, the local, and the relationship between them.

Investigating how those ways of reasoning come into being, what institutional factors foster them, how they may be linked with the broad and conflicting aspirations attached to projects as well as with the materiality and technological features of the latter, can help us take participation and pluralism one step further. It can help us trace the very conditions for the pluralistic knowledge to which the champions of a more democratic science aspire, and identify some of the limits to such pluralism – those embedded in the various categorizations and frames of reference adopted.

Such an epistemology of project appraisal would also productively complement the prevailing politico-economic accounts of why infrastructure projects so often fail to 'deliver' their big promises. These accounts tend to emphasize biased numbers, conflicts of interest and democratic deficits, without interrogating the knowledge basis which may sustain and make possible that very bias, conflict or arbitrariness.



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'Ways of calculating embed assumptions about the object of calculation and the calculating subject; they are informed by multiple ways of reasoning about both "facts" and "rights".'

Enterprise Risk Management Challenges and Aspirations in Ma

Marika Arena, Michela Arnaboldi and Giovanni Azzone

identify three requirements for successfully implementing enterprise risk management in an organization.

Enterprise Risk Management (ERM) can be regarded as the culmination of the risk management explosion which began in the 1990s. ERM, it is claimed, offers a holistic approach to assessing and evaluating the risks that an organization faces. ERM is most frequently defined with reference to the 2004 Guidance document published by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). This document depicts ERM in a managerial and prospective light, advocating that it should benefit corporate objective-setting and enter the domain of management control. According to the COSO framework, ERM is made up of eight components: internal environment, objective-setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring. Each of these components is carefully described in the guidance, which sets out what should be done to develop a sound ERM.

Notwithstanding this detailed guidance, implementing ERM is far from straightforward. Its embeddedness in business processes poses three main interconnected challenges: (1) creating an organizational space for ERM, (2) choosing the ERM owner, (3) conceptualizing ERM risks.

These challenges become even more critical for non-financial companies, where the ERM umbrella is expected to encompass a widely diverse array of risks such as plant and equipment failures, credit loss, reputational damages, and worker injuries.

Analyzing three Italian cases over a seven-year period (2002-08), we found that these challenges were faced in heterogeneous – and sometimes unconscious – ways, in an attempt to translate

the ERM model and guidelines into an actual instrument for managerial control. The cases (referred to with pseudonyms) are: *Cicero*, a provider of telecommunications services; *Phoedrus*, which operates in the oil and gas industry; and *Virgilio*, which is part of a large international group that competes in different fields of the automation and information industry.

ERM organizational space

ERM seeks to link risk management with business strategy and objective-setting, entering the domain not only of risk control, but also of performance control. When implementing ERM, it must not be forgotten that companies implementing ERM already have a pre-existing management control *history*, which may affect how ERM will be perceived and implemented by managers, and hence how it will be incrementally embedded in business processes. Firstly, this history comprises the existing processes for managing risks (such as risk specialists' practices) and performance (budgeting, scorecards, key performance indicators). Secondly, it encompasses past failures of control processes such as poorly managed negative events or unexpected losses of value.

Two companies (*Cicero* and *Phoedrus*) did not consider it crucial to position ERM within their existing processes of risk and performance management. The link with pre-existing practices was pursued only through few formal exchanges with risk specialists and management accountants, although ERM was inspired by the ERM-COSO framework. This choice, though unconscious, lessened the managerial impact of ERM from the outset. Managers were already satisfied and accustomed to getting risk and performance information from other actors/systems. ERM was seen as merely an add-on, or as a tool to

be implemented for formal compliance or corporate governance reasons. This sidelining was amplified by the absence of any past risk and performance control failures (such as operational damages or financial losses), which might have elicited a need to reconfigure the company's management control.

By contrast, profit losses and reputational damages underpinned the reconfiguration of control in the third case, *Virgilio*. In the wake of these adverse events, ERM was implemented – and communicated – as a new essential tool for managers which could support their decisions, help them understand the consequences of their actions, and prepare them for unexpected events. The failure of the pre-existing processes of managerial control were emphasized; previous corporate risk practices were formally grouped under the ERM umbrella; and an alliance was established with the Performance Controller, who took part in a review of the budgetary control cycle.

ERM ownership and approaches

Finding, or creating, an organizational space is the first challenge for ERM. This goes hand in hand with considerations about who will govern ERM (often the Chief Risk Officer (CRO)) and the approach that he or she should adopt.

The three cases analyzed highlighted the importance of the type of interaction CROs establish with managers as well as with other actors in charge of dealing with uncertainty: management accountants, risk specialists and internal auditors.

In one case (*Phoedrus*), ERM was not assigned to a dedicated role, but was taken up by the internal auditor. With low commitment and urgency, he struggled to justify (even to himself) the need for a new system of control. He adopted an approach that was 'non-disruptive', inspired by the COSO framework and strongly informed by the parent company's guidelines, defining a short questionnaire to be submitted to managers once a year.

In *Cicero*, a person (a former consultant) was hired to take on the role of CRO. Hierarchically reporting to the internal auditor, he committed himself to defining a rigorous approach consistent with the regulations and standards. This approach was chiefly externally oriented, while the internal

ement: anagerial Control

interaction took an impersonal form, mediated through questionnaires and documentation, with marginal face-to-face dialogue.

At *Virgilio*, ERM was assigned to a newly hired person (formerly a controller) and placed hierarchically under the Performance Controller. Favoured by this organizational positioning, the controller and the CRO jointly revisited ERM and budgeting. They have produced a pervasive and integrated process that involves continuous interaction with managers as well as risk specialists charged with fine-grained analysis of specific risk categories (eg financial, insurance). There are continual face-to-face interactions with managers. However, the CRO (and the controller) are not seen as 'friendly advisors', but rather as 'challenging integrative explorers'.

ERM risk conceptualization

The third challenge for ERM is its risk conceptualization. According to the COSO definition, a risk is an event that can impact on future value creation or erode existing value. Yet its translation into understandable and operable concepts is not univocal. The three Italian cases provide evidence of heterogeneity in this respect, moving differently along two related dimensions: the scope of the events search and the measurement of their impact.

The first dimension – the scope – refers to how novel and urgent the ERM risk search is (or is perceived to be). *Phoedrus*, with its 'non-disruptive' approach, translated ERM risks merely as a re-collection of previous information, without stimulating further reflection. This choice was a consequence of the company's reliance on existing control practices, and of the perception that 'important' risks were already managed and essentially tied to operational failures. A further search was considered a needless diversion of resources from core processes.

In *Cicero*, the CRO introduced an element of novelty into the questionnaires, dividing risks into standard categories and providing examples of 'new' categories such as compliance and regulation. However, this categorization did not serve to stimulate a sense of urgency among managers. Rather, it cast ERM as a corporate governance device to which business unit managers can contribute little.

In *Virgilio*, on the other hand, managers were challenged to think about the 'unexpected'. This was visually rendered in official presentations through funny examples – showing a bicycle carefully locked but then cannibalized (unexpected risk) – or by recalling recent, sometimes dramatic, negative events. This sense of urgency at *Virgilio* was accomplished and emphasized by the choice of measure adopted for risks: impact on EBIT (Earning Before Interests and Taxes). Choosing a financial measure and linking it to the incentive structure for managers helped augment the relevance of ERM risks and stimulated interest in thinking about future negative events.

In *Cicero* and *Phoedrus*, by contrast, the measurement was done using qualitative measures and risk maps, which managers consider unsuited to guiding their decisions and actions. In both companies, this perception was emphasized to some extent by the presence of strong, highly recognized pre-existing risk and performance practices and measurement.

Summarizing, the managerial ambition of ERM is indeed an opportunity for rethinking the process of management control, but this requires considering what is already happening in companies in terms of risk and performance management. Three interconnected challenges may be identified. Firstly, the company should find (or create) an organizational space for ERM which is coherent with its management control history. In doing this, it is crucial to understand the relevance of pre-existing practices and managers' reliance upon them in order

to avoid implementing an ERM that is formally perfect but not acted upon. Secondly, our cases evidenced the benefits of 'human' interactions between CROs and managers, and of establishing alliances with other 'uncertainty' experts. This helps make ERM an arena where managers can think about future risks and the consequences of their actions, instead of a mere box-ticking exercise. Thirdly, attention should be devoted to how risks are conceptualized and translated into operable measures. Novelty and urgency emerged as important for awakening managers' interest and ethical sensibility, but it was also important to translate impacts into measures which they felt were close to their day-to-day reality, decisions and actions.

This article summarizes the results of a study (2002-08) recently published in Accounting, Organizations and Society. Research has been extended to UK companies with the financial support of the Chartered Institute of Management Accounting (CIMA).

Arena, M., Arnaboldi, M. and Azzone, G. (2010) 'The organizational dynamics of enterprise risk management'. *Accounting, Organizations and Society* 35(7): 659-75.



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'The managerial ambition of ERM is... an opportunity for rethinking the process of management control, but this requires considering what is already happening in companies in terms of risk and performance management.'

China & Green

Developing Technology for a More Sustainable Chemical Industry



Kira J M Matus discusses China's endeavours to seize the opportunities of green technologies in its chemical sector.

Over the course of its growth and expansion, China has developed a reputation as a major industrial polluter. In recent years, a number of major chemical accidents and scandals have reinforced the notion that in many cases, the Chinese are willing to allow firms to value profits over the welfare of its citizens and its environment. International competitors point to the ability of many plants to circumvent environmental regulations as a major cost benefit for the Chinese, especially those firms competing on cost in chemical commodities. There is truth to all of this. The Chinese chemical industry has a troubled past and, from the perspective of health and the environment, remains problematic in many respects.

The Chinese, however, are just as aware of this as the rest of the world. Chemical plants have become major targets for local protesters, and in some municipalities have come under increasing scrutiny from regulators and politicians. For at least a decade, issues of environment and sustainability have increased in importance for civil society and across all levels of government. This has been reflected in everything from advertisements on bus stations in Guangzhou promoting sustainability to the stringent targets in the 11th Five-Year Plan, which called for a 20 per cent reduction in the intensity of energy use between 2007 and 2011.

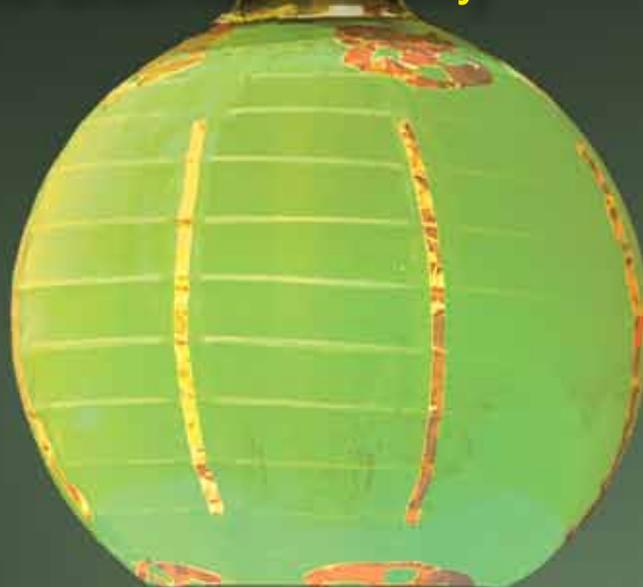
While the western world has approached issues of chemical risk and industrial pollution with government regulation and tactical policies, the Chinese, while burnishing their regulations, are also

working to turn their problems into opportunities. Instead of solely focusing on punitive measures, which have only ever met with mixed success, they are investing in proactive strategies of technology development that would make chemical production fundamentally safer and more sustainable.

For the chemical industry, the past two decades have been marked by flux and change. Many of the smaller, formerly public town-and-village enterprises have been privatized. Multinational chemical corporations have invested heavily in their Chinese operations, ranging from joint ventures to large research and development facilities. Chinese petrochemical firms are increasingly important on the world stage. The combination of growth and structural change in the industry in an era of increased attention to environmental and health concerns has revealed new challenges and new opportunities for the industry.

The media in the developed world, especially in the United States, has been fascinated by the ability of the Chinese to take a lead in certain areas of the green energy industry. But the Chinese have also turned their attention to the possibilities provided by green technologies in their chemical sector. In particular, the government has made significant investments in the field of green chemistry across their academic research sector.

Green chemistry, initially defined in the 1990s in the United States by Paul Anastas and John Warner (1998), is 'the design of chemical products and processes



Chemistry:

that reduce or eliminate the use or generation of hazardous substances'. Instead of concentrating on end-of-pipe controls to reduce emissions from a given process, green chemistry takes a life-cycle approach to chemical design and manufacture. The goal is not only to minimize the environmental impact of production, but also to ensure, to the greatest extent possible, that the chemicals themselves are benign to humans and the environment throughout their use and disposal. And this is not about products or processes that are more expensive or have reduced technical performance. Anastas and Warner have emphasized that from the start, the implementation of green chemistry is about adding sustainability considerations to the existing calculus of economic profitability and performance, rather than about sacrificing one for the sake of the other.

The Chinese government has seen the possibilities inherent in a paradigm that aims to produce competitive products which are simultaneously much less intensive in their use of resources and impacts. As such, within the past decade, they have started no fewer than 13 National Research Centres devoted to aspects of green chemistry at universities around the country. There are many more green chemistry research centres that have been funded at the provincial or municipal level. Many of these centres focus on research in important industries, such as pulp and paper, pharmaceuticals, biofuels and specialty chemicals. There is also work on greener nanotechnology and greener production methods for a variety of commodity chemicals. Furthermore, in addition to these research centres, a large portion of the national funding in chemistry and chemical engineering is being directed towards green chemistry. In 2008, funding for green chemistry by the National Natural Science Foundation of China ranged from 25 to 40 per cent of the grant funds disbursed towards academic research in chemistry and chemical engineering (depending on the particular area). The result of their investment is that Chinese science is advancing, but the United States and Europe remain the leaders in cutting-edge scientific advancement.

The Chinese government has been quick to systematically identify and support the potential benefits of green chemistry, and they have also developed their own particular research focus. Most strikingly, the Chinese have been most heavily involved in improving process efficiency. There is much less

focus on issues such as the use or generation of toxic chemical products. For example, in the United States and Europe, there is a vibrant debate about whether the use of bisphenol-A (BPA) in plastics should be limited or even eliminated. At the same time that this debate was heating up in the West, a Chinese green chemistry group was working to bring to commercial scale a new, greener process for the production of BPA. This is an important difference from the United States and Europe, where the role of green chemistry in chemical regulation has thus far been envisioned as a tool for developing alternatives to toxic substances and for creating safer products for industrial and consumer use.

There are several explanations for the appeal of green chemistry in China. Firstly, the Chinese are dealing with much more pressing pollution problems, especially in terms of air and water quality, than the United States or Europe. Secondly, as many provinces are becoming increasingly stringent in their monitoring and enforcement of pollution regulations, firms are discovering that their traditional end-of-pipe technologies are insufficient. They need to reduce pollution further upstream in their processes. Furthermore, they are under pressure to meet energy efficiency targets. For many chemical firms, this translates into finding more efficient modes of production. Green chemistry is complementary with other technology programmes pursued by the Chinese. Green chemistry projects relating to bio-based energy production fit in with large government investment into alternative energy sources. And the concepts and technologies of green chemistry are potentially useful to projects designed for creating areas with a zero-waste, 'circular economy' – another area of technical and industrial investment on the part of the government.

There are also market arguments for China's investment in green chemistry. In China, which has a growing chemical industry that is in a state of transition from focusing on low cost commodity chemicals to the more lucrative innovation-intensive specialty markets, many of the resource use efficiencies embodied in green chemistry could provide important cost savings. This is especially true if enforcement of environmental regulations makes it harder for firms to cut costs by evading environmental control regulations.

The Chinese scientific and industrial establishment is still working to figure out how best to leverage green chemistry in order to address challenges

facing China's chemical industry. While the goal of green chemistry is to improve both the processes used to produce chemicals and the chemicals themselves, in reality, this is a long process of stepwise continuous improvements. Scientists and firms have to make decisions about whether their initial priority should be to improve processes for products already on the market or to design more benign alternatives. Both are necessary, but in a world of limited resources, difficult decisions must be made. For the chemical industry in China, which is often selling into existing global commodities markets, those process improvements offer the potential, in the relative short-term, of much needed economic, environmental and health benefits. In the long run, as chemical regulations tighten in the rest of the world, the Chinese could quickly become market leaders if they were able to cultivate expertise in developing green alternatives to existing problem chemicals.

Chemists like to refer to chemistry as the 'central science' – a discipline that takes the laws and mathematics of physics and links them to the messy reality of the world. In the world of production supply chains, the chemical industry also provides links – this time between raw natural resources and the vast array of products available to the modern consumer. The importance of the chemical industry is indisputable: chemicals are key components for essential products such as plastics, textiles, drugs and even food. Finding ways to control the risks resulting from society's production, use and eventual disposal of chemicals is a complex, but important task. And while there is still much to be done by both the Chinese and global chemical industries, Chinese scientists, engineers and firms are working to change the industry's reputation as a source of environmental and health disasters to one that is responsible as well as profitable.

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'In the long run, as chemical regulations tighten in the rest of the world, the Chinese could quickly become market leaders if they were able to cultivate expertise in developing green alternatives to existing problem chemicals.'

Guidance on 'Reasonable Practicability' for the Railway Industry

Anson Jack summarizes the work the railway industry has done to clarify the basis of decision making affecting safety, and some of the applications of the consensus that was developed.

Railways are demonstrably the safest form of land transport, and their safety record has improved consistently since privatization in the mid 1990s. However, the series of high profile accidents around the turn of the century, coupled with a very open network which always allows the media access to secure footage of accidents that look frightening but may involve no serious injuries, create the perception that railways may not be a safe way to travel. Notwithstanding that, surveys by Passenger Focus, the national watchdog for rail passengers, repeatedly show that safety does not rank among the top ten concerns of regular passengers.

The industry has senior managers who take big investment and operating decisions with safety implications (for instance, when to replace ageing equipment, or whether to operate the service in times of very severe weather). Moreover, the industry has many junior staff who make hundreds of day-to-day decisions that can affect passenger or workforce safety. When things go wrong, the incident may be declared a 'scene of crime', or the safety regulator may investigate whether there have been breaches of Health and Safety Law. If managers always took the most cautious approach, many of us would not be able to get to work on time so regularly, and investments would cost even more than they do today. Getting the balance right requires knowledge of the law and sound commercial judgement.

Making judgements about what is or isn't 'reasonably practicable' in accordance with UK law has always been difficult. The primary legal duty relating to rail safety arises under the Health and Safety at Work Act 1974, which requires companies to ensure safety so far as is reasonably practicable (SFAIRP). However, this is a general duty, and there is limited case law to help clarify how a company can determine what measures are reasonably practicable – and hence

required. This creates the potential of conflicting interpretations of the law.

Ultimately, determining whether an action is reasonably practicable involves balancing its risks, costs and benefits. The guiding principle was established in 1949 in a Court of Appeal judgement in the case of *Edwards vs The Coal Board*: 'a computation must be made... in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other, and that, if it be shown that there is a gross disproportion between them – the risk being insignificant to the sacrifice – the defendants discharge the onus on them'.

Although this principle is informative and much quoted, there is some ambiguity within the words and it has been interpreted in many different ways in the 60 years since it was made. Correct interpretation is crucial to the management of safety across a range of safety critical industries. What guidance has been produced was generally written by the regulatory community, and therefore provides an interpretation of how regulation is undertaken in the context of 'reasonable practicability'. This is subtly different from a practical interpretation of 'reasonable practicability' for those with the direct responsibility for managing risk – the companies involved.

Seeking to improve clarity on this issue, RSSB led a rail industry initiative to develop guidance for those legally accountable 'duty holders'. This led to the publication of *Taking safe decisions*. The document is the product of an extensive programme of research, analysis, and consultation. It describes the railway industry's consensus view of how industry companies should take decisions which: properly protect the safety of rail industry staff, passengers,

and others; satisfy the law; respect the interests of stakeholders; and remain commercially sound. The document was developed by a think tank of industry experts (including economists, operators, and safety professionals), the Department for Transport, and the Safety Regulator. It was endorsed by the industry through the RSSB Board. It was developed concurrently with internal guidance on cost-benefit analysis in support of safety-related investment decisions, produced by the Office of Rail Regulation for its inspectors.

Taking safe decisions clarified that in the railway industry duty holder decisions which impact on safety are taken either to meet legal requirements or because they are sensible from a commercial perspective. The significance of this distinction is that each type of decision has different implications and involves different considerations.

Key clarifications established through the work include:

1. The document states that duty holders deciding whether a measure is necessary to ensure safety so far as is reasonably practicable need not take into account societal concern. Although it may harm a company's reputation to ignore *societal concern*, we clarified that it is not a legal requirement to consider it. This was backed up with the publication by the Office of Rail Regulation of its approach to the use of cost-benefit analysis (CBA) techniques in making safety decisions, which states: 'Duty holders do not need to consider any potential socio-political response to a multi-fatality incident; this is a matter for the government and regulators.'
2. A judgement about whether a measure is required to ensure safety so far as is reasonably practicable might be supported by a CBA. Specific guidance about how to construct a CBA is included. However, the key component of reasonable practicability is the use of managerial judgement, backed up by whatever analysis or evidence is appropriate given the nature of a decision.
3. The document clarifies that application of the tolerability of risk framework presented by the



'Although it may harm a company's reputation to ignore societal concern, we clarified that it is not a legal requirement to consider it.'

Application of Taking safe decisions

The route to *Taking safe decisions* was published in the *Journal of Risk*

Research in spring 2009 (Bearfield 2009). In September 2009, *Taking safe decisions* was recommended as 'very useful input to work on balancing risks' in relation to the nuclear sector by the chairman of the Safety and Reliability Society.

But what use of the consensus has been made in the rail industry? I am pleased to say that it has not been tested 'in the courts' as yet, but a number of significant applications have already been documented.

Taking safe decisions has been used by rail industry duty holders to make decisions about investments and management actions, and in some cases to decide not to do things. Examples of the latter include a decision by the whole industry not to fit seat belts in trains. This potentially counter-intuitive decision was enabled by the use of significant and varied technical research, risk modelling, and an extensive trawl through all the possible accidents that have never occurred on the rail network. In other words, the decision was taken on an appropriate 'risk basis' and has been endorsed by the Safety Regulator (ORR).

Another example of a decision not to do something was the decision by an individual train operating company not to fit a new piece of safety technology associated with preventing 'signals passed at danger' until the existing kit is life expired. Following the process outlined in *Taking safe decisions*, the operator's board concluded, and documented the decision, that the way they manage the relevant risk – using proactive monitoring by means of

the already available in cab recording devices – reduces the risk to a level below what the new kit is designed to deliver.

Following briefings at professional institutions and to other sectors, we are also aware of significant decisions and impacts of the documented approach in both the highways and nuclear sectors.

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The Cost Benefit Analysis tool that is compliant with *Taking safe decisions* and the related ORR guidance is available at www.safetyriskmodel.co.uk



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RSSB is an independent non-profit making body – owned by the industry but independent of all categories of member in its decision making. Since its inception in 2003, RSSB has carried out a broad range of activities which support the industry in delivering improved safety, performance, and cost. These activities include a number of services that the industry requires on a continuous or regular basis, combined with the facility for solving specific problems that emerge from time to time.

Health and Safety Executive in 'Reducing Risks, Protecting People' is not a requirement of the Health and Safety at Work Act etc 1974 as such. The framework is a conceptual guide for regulators that can help duty holders manage and prioritize safety activity. Importantly, this leads to the conclusion that although risks to a particular part of the population may be defined in the framework as 'intolerable', the activity does not automatically have to stop immediately. A well-intentioned duty holder could use this information to prioritize action and still be within the law.

The first of these clarifications was particularly important for the industry. There were perceptions that regulatory enforcement might be encouraged when there is political pressure on the government and regulator in the aftermath of a high profile accident. Although such accidents are now very rare, there remains a small risk of such events. These perceptions have historically given rise to risk aversion among decision makers with the potential to increase the costs to the rail industry, and therefore to the fare payer and taxpayer (railways being subsidized). Governments can, and do, react to 'societal concerns': as elected bodies they have a mandate to do so. For example, the Railway Safety Regulations 1999 mandated the fitment of a form of train protection to rolling stock on the British mainline rail network even though a CBA undertaken to analyze this measure did not support the judgement that it was necessary for reducing risk as low as is reasonably practicable.

Beyond the Aeroplane

Ulrich Beck reflects on his experiences during the flying ban which followed the 2010 eruption of Eyjafjallajökull and discusses risk and the anticipation of catastrophe in the context of world domestic politics.

Was the comedy of flight and ash, which followed the furore around swine flu, merely a further example of how quickly we plunge into collective hysteria? Or was it more than that? In the sixties, Hannah Arendt had bugged us with the question: what happens if (due to advancing automation) the labour society runs out of labour? Now the ash cloud of Eyjafjallajökull has given the world a grandiose 'crisis experiment'. With existential implacability, it has forced upon us the question: what happens if in the flight society¹ all flights are cancelled? Volcano mimes nature's trade union: if my strong ash wants it, the world's air traffic stands still! (We shall disregard the wind's complicity here.)

Climate change put a topic on the agenda: is there (a mobile) life after the car? Suddenly, the next problem emerges: what comes after the aeroplane? Might this have been a foretaste of the future, the post-jet age? Labour, car, or aeroplane – in each case, what appeared to run counter to human nature once has become our 'second nature' to such an extent that we dare not even imagine a labour society without gainful employment for all, a car society without cars for all, a flight society without flights for all. Yet precisely this imagination of the unthinkable will be necessary.

It is the inestimable benefit of the ash cloud crisis experiment to have made this very fact crystal clear: given the way we live and think, and the way modern society is organized, we are condemned to flying! Without aeroplanes, we resemble figures on Samuel Beckett's stages, body fragments, torso existences, whose world, whose life, has been thrown out of joint. Everyone wants to or has to get somewhere as fast as possible and back again as fast as possible, in order to do business or stage

being busy, yawn at conferences or endure family celebrations, scent the air of a mini-break or live long-distance love.

As I am writing these lines, I am sitting on the aeroplane replacement stopping-train from Trondheim to Östersund, which by no means diminishes the beauty of the fjord glistening in the evening light. Why is this remarkable? Because here, in turn, an element of world domestic politics manifests itself significantly. What actually happened? Nothing. And that's the point: that nothing happened.

The total ban on flying in Europe was not prompted by a catastrophe (like the crash of the Polish government jet which caused the deaths of president Lech Kaczynski and his entourage), but by the anticipation of such a catastrophe. And this representation of the catastrophe for the purpose of its prevention was based on models of computer simulation – no more, no less. Some judge the fact that nothing happened, that no aircraft came down, as proof that the measures taken were correct; others judge it as proof of hysteria and of the measures' fallaciousness.

Still, it is important to ask: does the catastrophe to be prevented have to occur for the measures adopted for its prevention to be (re)cognized as appropriate? The measures taken would then always be wrong – either because a catastrophe occurs or because no catastrophe occurs.

Yet the risk alone – which is difficult to calculate – that something bad could happen is suddenly omnipresent and creates a new commonality of situations across all boundaries: that between deadlock and odyssey. For I share my flight into adventure with many millions of stranded people

who can now no longer ascend to the skies, but are trying to reach their flight destination on earth (eg by transcontinental taxi journeys), or must camp with kit and caboodle on camp beds in eerily empty airport buildings.

Our 'we' has been colourfully thrown together. It comprises the most diverse income classes, all sorts of skin colours and nationalities, those with and those without visas, Christians and Muslims, agnostics and esoterics. Yet we all have in common one attribute of the moment which fundamentally determines our situation here and now. We make up the diaspora community of fate – fragmented into thousands and thousands of individual fates, scattered across the globe – of the 'living side effects' of a staged danger, rather than of the volcanic cloud conducting nature's uprising against civilization.

Volcanic clouds have always existed; taken by themselves, they constitute no danger. They become a hazard only within the horizon of the globalized and ever-expanding aviation industry. The 'fate of side effects', against which our mobile life form shattered for one historical moment, mirrors a globalized air traffic system at the mercy of 'internalized nature'. The volcanic ash cloud is the cow on the motorway; it is an 'enemy' of the 'flight society' and its airlines alone. Pilots treat these gorgeous clouds, whose images enchanted the evening news, with the greatest respect, avoiding any contact and staying far away. When the volcano is spitting and fuming, airlines with volcanic experience such as Alaska Airlines assemble their air fleet on the ground and protect their parked aircraft with plastic covers. 'We've been flying for over a hundred years now, but the volcanoes have been there for a lot longer, and to be honest, they're winning', says a flight captain.

'... world domestic politics is also what happens and remains when our most ordinary problems become global, but the institutionalized 'answers' remain national.'

As though it were a play from a cabaret show, the ever-same spectacle is performed again and again with varying roles worldwide. The regulating actors – politicians and experts – are vacillating between ignorance and hysteria: either they sweep the risks under the rug or they portray them dramatically, and often they do both at different times and in front of different audiences.

Do you still remember the to-ing and fro-ing about swine flu? Millions of vaccination vials ended up in the rubbish tip. Or do you recall the Chernobyl cloud, that radioactively contaminated cloud which, following the ‘communist’ (Franz Josef Strauß)² nuclear reactor disaster 24 years ago, was terrifying Europe? Nuclear energy – such was the word back then, and such is the word again today – is absolutely safe. Or do you recall ‘September 11’? Shortly before the terrorist attack, those who pointed to the possibility of this type of attack were ridiculed and declared mad. Afterwards, terrorism hysteria was fomented so as to justify the invasion of foreign countries.

And now the still ongoing world drama of the financial crisis! Initially, the stage direction was: keep dead quiet! Down with the critical voices pointing out the organized irresponsibility of risky transactions. Then the monster was portrayed and the large banks, economically and morally bankrupt, were fed back to health with billions of public money. Meanwhile, it’s all Greece’s fault, even though everybody knows that the risk spectre of national bankruptcy is haunting Spain, Italy, maybe Great Britain above all, and at least also some communities in wealthy Germany. The Euro is ablaze!

For a few days, everything was upside down. Ministers for transport, who one did not even know really existed, suddenly became rulers of the sky. Floods of claims to recourse were triggered; legal systems failed to apprehend the facts of the case. And the same mantra everywhere: ‘The volcanic cloud came totally out of the blue – nobody could predict that.’ And: ‘Our top priority is safety!’

What kind of safety? After all, in next to no time the risk of crashing generates the risk of bankruptcy. The result is a wrestling match between threatening

calamities which throws decision makers into a dilemma. Do I uphold the ban on flying as a consequence of which the (‘system-relevant’) aviation industry slithers into bankruptcy and the almost bankrupt states must step in here, too? Or do I give clearance to air traffic, and then an aircraft does crash – and my poll ratings along with it?

We are addicted to certainty. We are not prepared to accept that the scale of the threatening catastrophe renders the evidence of the low probability of its occurrence vacuous. Consequently, it is becoming increasingly difficult to distinguish clearly and firmly between hysteria and a purposeful politics of fear on the one hand, and appropriate alarm and precaution on the other.

The harmless beauty of Iceland’s volcanic cloud even encapsulates the state of Europe. Europe’s countries have agreed to administer only the upper airspace jointly, ie through a centre for air navigation safety. The latter deals exclusively with aeroplanes seeking to fly across the continent in high altitude. But anyone wishing to go down or up, ie to feel European soil beneath their feet, enters the jungle of nations. Under Lufthansa’s stage direction, Germany has been transformed practically overnight into a new kind of ‘flight society at one’s own peril’. Airlines can apply for ‘visual flights’, for which air traffic control declines all responsibility. In this scenario, jets also fly through air layers which contain residues of volcanic ash, though no hint of greater clarity has so far been brought to the actual problem: is the cloud dangerous or not? This gives rise to the question: would it not be possible to set limit values for the dangerousness of volcanic ash? In theory, yes, in practice, no; for this is countered not only by the polarity of interests, but also and above all by the limitless lack of coordination among the regulating agencies.

It emerges that world domestic politics is also what happens and remains when our most ordinary problems become global, but the institutionalized ‘answers’ remain national. Air space is sovereign territory. If the nations surrendered their control over it – and this is the crux – they would not lose; rather, only then would they gain sovereignty in an age in which one can say one thing with certainty: the global business of air traffic can no

longer be regulated nationally (and this applies to the business of financial transactions, too). Air passengers, however, would then also be spared the crisis experiment of chaos, which took place all over Europe and involved the seemingly completely arbitrary opening and closure of airports and air spaces. What was thus repeated with the ash cloud was the political didactic play repeatedly performed by the financial crisis and the terrorist acts of September 11, by mad cow disease and many other examples: so much could be easier if humans, special interest organizations, and politicians dropped the antiquated notion of national sovereignty and understood that sovereignty can be won back only through world domestic politics on the basis of cooperation, agreement, and negotiation.

Translated from the German by Matthias Benzer



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1 Translator’s note: *Fluggesellschaft* is here used in the wider sense. In the narrower sense, the term means ‘airline’.

2 Translator’s note: Former Bavarian minister-president.

ACCOUNTING REGULATION:

cool measures or frozen ideologies?

Julia Morley identifies institutional entrenchment as an important constraint on regulatory change in financial reporting.

Since the late 1990s, new accounting standards introduced by major international regulators of financial reporting have required companies to change the way they report their activities. Under the new rules, companies must bring onto the balance sheet liabilities (or assets) for hard-to-value items such as pensions and financial derivatives. Some critics have condemned this economic approach to reporting by citing adverse socio-economic consequences. For example, the requirement to recognize long-term obligations for pensions has been charged with causing the closure of many defined benefit pensions schemes, which effectively transfers potential benefits away from future retirees. Separately, the requirement to include complex derivatives on the balance sheet has been blamed for destabilizing global capital markets and contributing to the global financial crisis of 2008-09.

At the centre of the controversy is a basis for valuation known as 'fair value'. This refers to a subset of economic techniques used to value the assets and liabilities of a company. Fair value methods of valuation normally require an accounting item to be listed on the books at market price. If a market price is not available – which is often the case with pension obligations and complex financial derivatives – financial models may be brought in as a proxy. The logic of using financial models for valuation has attracted much criticism on grounds of applicability: critics of fair value argue that derivatives pricing models do not necessarily get valuations right. In their view, it is worse to have a potentially inaccurate number on the balance sheet than none at all.

Given these criticisms, one might ask how this new financial reporting paradigm emerged. Standard setters committed to fair value claim that such methods provide the most relevant

and useful information for users of financial reports. They tend to speak of an 'evolution' of financial reporting standards, where 'evolution' in their terms is synonymous with 'improvement'. Such a view assumes that standard setters are responsive to environmental factors and rationally develop approaches to financial reporting which 'best' serve the needs of users. At the heart of this functional explanation of the persistence of economic approaches to financial reporting is the assumption that institutional decision making is rational.

Opponents of fair value meanwhile explain its rise and adoption with the potentially unfounded ideological commitments of a particular group of standard setters. In the rhetorical war between ideologies, these standard setters have been – perhaps unfairly – described by sceptics as 'fair value space cadets'. Nevertheless, whether sound or not, the fair value paradigm has come to dominate ways of thinking about financial reporting and ways of deciding what constitutes 'good' financial reporting. The sceptics have been marginalized.

One way of explaining the persistence of such strongly held beliefs within the fair value school, in the face of strong criticism, is by reference to institutional 'ways of thinking'. Such paradigms may in fact determine what constitutes the 'best' way of representing in the financial statements anything from pension liabilities to financial derivatives. Using this explanatory model, academics have argued that an entrenched institutional 'way of thinking' frames the perception of problems and then drives

standard setters to consider only particular types of solution. Institutional theorists invoke theories of 'institutional logic'; philosophers talk of 'conceptual schemes'; and psychologists cite 'groupthink' in this regard. Applied to financial reporting, these terms pick out a dominant way of thinking within institutions which constrains debate by determining which *kinds* of arguments are permissible and which are not – and even which issues are deemed acceptable additions to an agenda.

This 'institutional entrenchment' of ways of thinking can arise as a result of the reluctance of group members to criticize or deviate from group norms and is associated with highly cohesive groups. It provides a psychological explanation for the development of attitudes held by institutions. When this process is in effect, individuals may feel unable to oppose the strongly held views of the group, possibly for fear of appearing foolish. They may be loathe to raise questions because they do not wish to appear to be wasting the group's time with issues deemed irrational according to the consensus view. The result may be a decision making process which is subject to great path-dependency effects: the chosen way forward may depend more on past decisions than on current evidence pertinent to the case at hand. The dominance of the consensus view thus places a check on the ability of individual members of a group to question its belief system – with potentially adverse consequences.

Consider the example of board meetings at standard setters such as the International Accounting Standards Board. The stated purpose of these meetings is the discussion of technical issues in financial reporting. The meetings are large, often with all or most of the 15 board members taking part. Some attend in person, others join via video link and others via a phone link. Seats are reserved at the sides of the boardroom for official observers – often specialists in financial reporting or financial journalists – who busily take notes. The meeting is also made available to the

'With buy-in from these institutional groups and given the existence of favourable economic conditions, the stage was set for the introduction of a new valuation scheme – and a new way of thinking.'



public via a webcast. One might reasonably expect that in this environment, board members feel under considerable pressure to conform to the accepted way of thinking. While they might be prepared to object to specific technical details under discussion, they might balk at raising issues which undermine the current paradigm. To stand up to the assembled wisdom and ingrained attitudes would be a bold act. Of course, this effect would be attenuated by discussions between members outside of the formal meetings, and no doubt much debate occurs off-line.

Even a radical proposal by a board member who is not intimidated by the dominant way of thinking and who is prepared to appear out of step may not achieve much. Other factors often lock the group into a particular approach. Much as the QWERTY keyboard remains a dominant design, institutional views are inevitably hard to change even with the support of key decision makers. Requirements of coherence within its regulatory domain may undermine attempts to change any individual part of the set of rules. For instance, if standard setters change one particular valuation method for assets and liabilities, they must consider potential problems of inconsistency with existing standards and with their bible: the *Conceptual Framework* published by the IASB and the US financial reporting regulator. Once a particular approach has gained a certain momentum on a standard setting board, the possibility that the lone voice of an individual can shift the institutional direction becomes slim. The

weight of historical development effectively carves out possibilities for future change.

In spite of these arguments that institutional ways of thinking are hard to change, evidence shows that institutional leviathans do sometimes give way to alternative modes of thought. The current predisposition for economic representation in standard setting itself replaced an incumbent paradigm favouring legal sources of evidence for accounting numbers. Given the apparent cultural stickiness in regulatory institutions, what is the source of change in institutional ways of thinking? The case of a shift towards economic valuation in financial reporting suggests that the source of change can often be traced initially to an exogenous shock. This shock might take the form of the emergence of a new item to be valued, for instance a pension obligation for which companies are legally liable and which cannot be valued satisfactorily by means of the existing measurement scheme. When new laws made companies liable for pension payments, and when off-balance sheet financial derivatives were blamed for a number of high profile company failures, all eyes fell on the standard setters with the expectation of a swift solution.

When confronted with such an item, standard setters looked beyond the boundaries of the agreed institutional lexicon in their struggle to resolve the problem to the satisfaction of interested external parties. Moreover, they went further and sought theoretical approaches from other disciplines. The

forced hiatus in agreed ways of thinking, resulting from the need to value pension liabilities and financial derivatives, led to the opening up of an inter-disciplinary gateway. Economic theory – with its concepts already embedded in the language of business – offered a legitimate solution to valuing these new items. Given this external shock, and with the right set of background conditions, the language of standard setting mutated. The meaning of terms such as ‘reliable’ changed from ‘verifiable by recourse to a legal document or physical existence’ to ‘agrees with our interpretation of economic theory’. Such theory-based valuation was admissible because it provided a workable solution and appeared legitimate to related institutional interest groups. With buy-in from these institutional groups and given the existence of favourable economic conditions, the stage was set for the introduction of a new valuation scheme – and a new way of thinking.

The most interesting lesson we learn from studying such episodes of conceptual change in financial reporting is a greater understanding of the process of change in institutional thinking generally. Furthermore, it may help us to identify the roots of interdisciplinary influence on regulatory regimes.



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Recent Work in the Sociology of Finance

Bruce G Carruthers discusses different levels of analysis of financial sociology and explores their implications for making sense of the current financial crisis.

Bubbles sometimes come in series. Recently, an American housing bubble grew in the early 2000s and burst around 2006. US mortgages formed the basis for a subprime finance bubble which burst around 2007, and a stock market bubble which popped in 2008. Now we are in the midst of another type of bubble, a frenzy of scholarly activity aimed at making sense of the previous economic bubbles. Although the recent financial crisis garnered a burst of attention from sociologists, in fact the sociology of finance has been expanding for some time. And this has been a trans-Atlantic expansion, involving North American and European scholars.

Finance has been studied at many different levels. At the macroscopic level, sociologists noted connections between various financial developments and broad processes like globalization and the dominance of neo-liberalism. Global integration is farther ahead in capital markets than in product or labour markets, so finance functioned as the 'leading edge' of globalization. Among other things, this has put private rating agencies, like Moody's and Standard and Poor's, in the unusual position of passing judgement on the economic policies of sovereign governments. A Moody's downgrade is something that a Greek or Portuguese finance minister cannot ignore. Globalization has also meant that financial shocks reverberate quickly around the world. With unmanageable speed, problems with subprime mortgages based in a Cleveland Ohio suburb soon plagued European banks and pension funds.

Within the US, the world's leading capitalist economy, recent decades witnessed a transformation of the domestic financial system. Deregulation has helped turn banks from staid intermediaries into entrepreneurial innovators. Large, stable, heavily regulated sectors, like savings and loans, are greatly diminished. Mergers, consolidations, and acquisitions helped to produce some extremely

large banks that offered an unprecedented variety of financial services and which, during the crisis, proved 'too big to fail'. Not only did some firms grow in size, but, as Krippner (2011) shows, the financial sector itself grew in relation to the overall economy. Finance became a larger proportion of US GDP and gained a bigger slice of private sector earnings. Alongside banks and investment banks grew a 'shadow' banking system, populated by private equity groups and hedge funds that were largely unregulated even though they performed some of the same functions as the regulated banking system. Furthermore, average wages in the financial sector increased during the 1990s and 2000s. Innovation and remuneration tracked each other, and at the very high end of investment banking the financial rewards became positively obscene. Ho (2009) shows in detail how much elite social status played a role in the recruitment of entry-level investment bankers from Ivy League universities and top American business schools.

The politically induced deregulatory shake-up of American financial institutions transformed the business model at the heart of banking. The full extent of institutional change caught the attention of organizational sociologists who focus on the economy. Davis (2009) summarizes a great deal of research in tracking the shift from originate-and-hold banking to originate-and-distribute. This change took banks from a situation where they ordinarily made loans to customers, and kept those loans in their own asset portfolio, to one where they made loans to customers, but then sold the loans to someone else. The latter involved the process of 'securitization', in which loans were put into pools, and rated securities were issued against these asset pools. The simplest were 'pass through' securities, but more complicated types of financial engineering begat collateralized debt obligations (CDOs) and even CDOs-squared (a CDO constructed out of CDOs). The change has also been characterized as a shift from 'relationship-based' to 'transaction-based' banking.

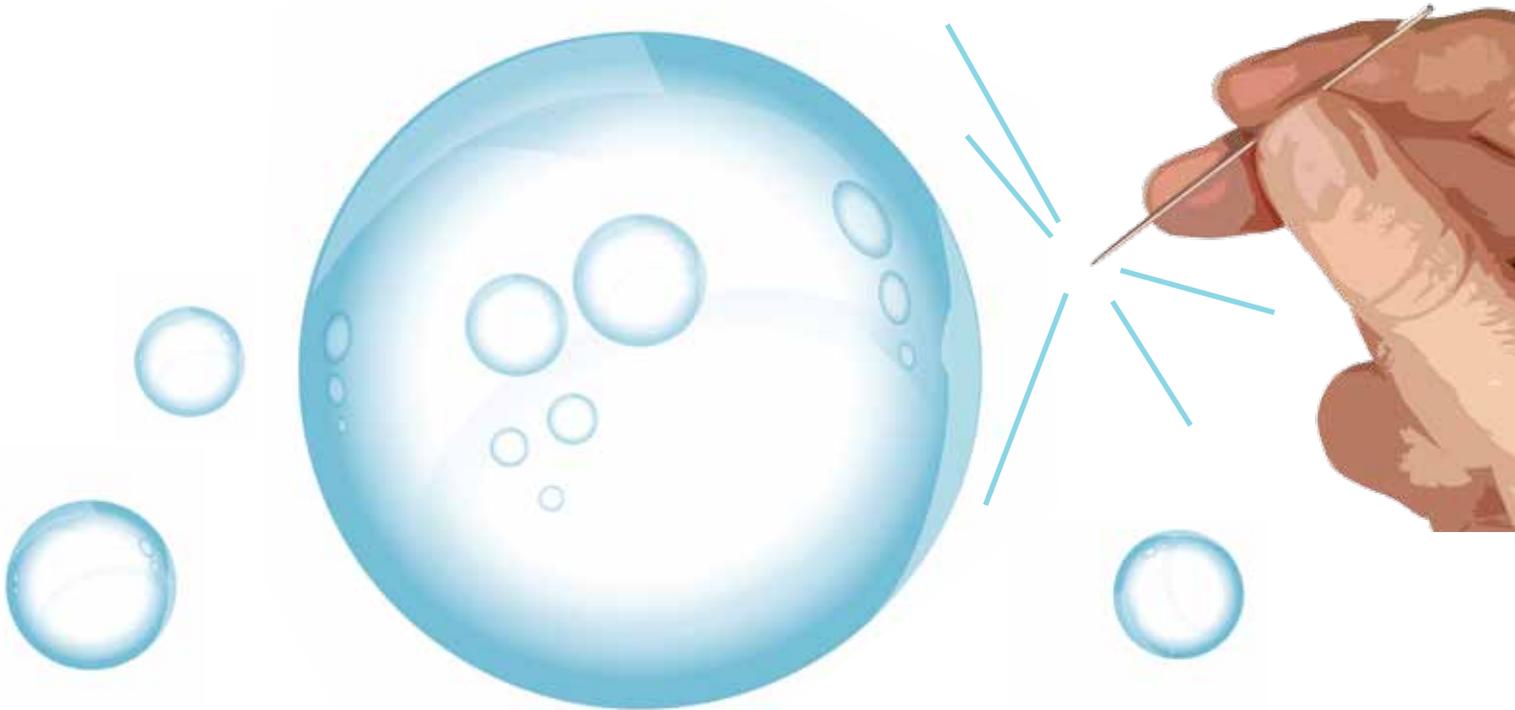
However characterized, this change altered how financial institutions operated, in ways that

factored into the financial crisis. Securitization enabled banks to move assets off their balance sheets and thereby reduce the impact of capital requirements set by regulators. Securitization may have also undermined the interest that lenders had in ensuring that borrowers were truly creditworthy. After all, the lender bore the cost of debtor-default under the originate-and-hold business model, but it was investors who purchased securities that suffered under the originate-and-distribute model. Under the old model, banks earned profits on the spread between interest on deposits and interest on loans. Under the new model, banks earned fees from transactions, and higher volumes of activity meant higher profits. The incentive to lend only to creditworthy borrowers may have diminished.

Securitization also expanded the role of the rating agencies. Traditionally, they evaluated corporate bonds, and firms with good ratings could borrow from investors at lower interest rates. Securitization involved the creation of new securities out of pools of loans, and given that investors knew little about the underlying loans, or the original borrowers, credit ratings gave them some assurance about the quality of the new securities. More complex securitizations, such as CDOs, were particularly opaque to investors and so required a credit rating if they were to be marketable. Structured finance, as it was called, proved to be extremely profitable, both for the originators and the rating agencies, and encouraged rapid financial innovation. In retrospect, the substantial failure of rating agencies to gauge the true riskiness of these new securities was a key feature of the financial crisis, and a lesson in the limits of financial self-regulation and private risk management.

Deregulation wasn't confined to the US, of course. As many scholars have noted, a neo-liberal orientation dominated international policy making during the 1990s, and broadly mandated deregulation and liberalization (as well as privatization, balanced budgets, and various other measures). Particularly thanks to the IMF, whose loans gave it considerable leverage over small and medium sized economies, many countries

'Although modern finance's global reach and technical complexity make it seem abstracted and disembodied, researchers have noted that financial activities still occur in very particular locations and within distinctive communities.'



had to embrace deregulation of one sort or other in many different market sectors. Across the globe, such policies helped to integrate capital markets.

Sociologists have explored how changes in high finance affected ordinary American households over the last several decades. For starters, direct exposure to financial markets increased. More Americans owned financial assets (like stocks and bonds, or shares in mutual funds) and the long-term shift from defined-benefit to defined-contribution pension plans put people's retirement at the mercy of the stock market. American households also got deeper into debt. Much of that additional indebtedness came in the form of home mortgages. Greater indebtedness allowed households to maintain consumption at a time when both income inequality and income instability were increasing. But it also made households more vulnerable to income shocks or big declines in the prices of homes and financial assets (Sullivan 2009). One key feature of the recent recession is that, unlike the recessions of the early 2000s and 1990s, housing prices and share prices dropped substantially and simultaneously. And the effects of declining housing prices were particularly great in the subprime mortgage market, which was dominated by marginally creditworthy borrowers.

Although modern finance's global reach and technical complexity make it seem abstracted and disembodied, researchers have noted that financial activities still occur in very particular locations and within distinctive communities (eg Wall Street or the City). Some of the characteristic features of social communities apply to financial communities as well: action on the basis of peer groups, internal heterogeneity on the basis of status orderings, the tendency to commingle economic action with social interaction, and the importance of social networks. Researchers working in the science studies tradition

have examined how much individual financiers rely on an array of devices, both physical and conceptual, to make and enact decisions (eg MacKenzie 2006). Financial traders sit in front of multiple computer screens, having particular information streamed to them, and linked to other persons through a variety of media (email, instant messaging, telephone, texting). Options traders rely on formulas, like the Black-Scholes pricing model and its successors, when they value trades and pursue arbitrage opportunities. Lenders depend on credit scores, which are derived using complex algorithms, to inform lending decisions (Rona-Tas and Hiss 2010).

The crisis stunned financial markets, but it stimulated financial sociology. Given how quickly financial markets evolve, a great deal of descriptive work remains to be done just to outline their basic structures and dynamics. And the financial regulatory framework itself has shifted considerably, weakening during the 1990s and 2000s but now being bolstered in light of the cost and extent of the crisis. Many important sociological issues remain open as well, but I'll close by mentioning just two. The first concerns the traditional sociological topic of inequality. Prior research has focused primarily on income and, to a lesser extent, on wealth. It should be extended to include access to credit. Some initial steps have been taken in this direction, particularly by scholars studying mortgage lending, but the full range of credit, both formal and informal, has never been considered. Public policy interventions often target credit activities, encouraging some credit flows while curtailing others, but the overall implications for social inequality remain largely unstudied. Cross-national and historical studies are clearly necessary to take account of institutional variations. Secondly, much remains unknown about the conceptual and material devices that individuals use to interpret financial information, enact financial transactions, and manage financial relationships. Valuation is a core activity, for example, and as recent controversies over 'fair value'

accounting (or 'mark-to-market' valuation) reveal, the crisis sorely tested the machinery normally used to value financial assets. Valuation relies on a variety of conceptual devices, and their development, diffusion, adoption, and standardization are all deeply social processes. Credit assessment is another core activity, and lenders also rely on various technologies to assess the creditworthiness of would-be borrowers. When these technologies fail on a large scale, as in the case of credit ratings, the consequences can be dramatic.

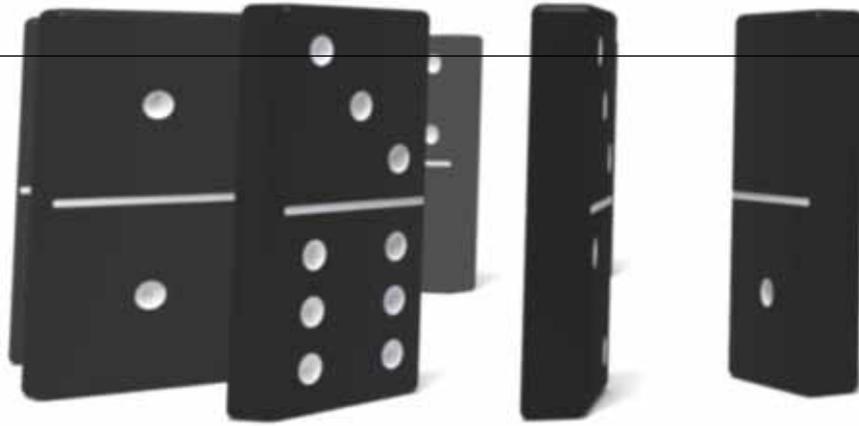
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Understanding and Addressing the CRISIS IN FINANCIAL REGUL

Peter Bonisch discusses some of the broader lessons of the financial crisis for risk and regulation of the financial sector. He looks at how the failure of critical aspects of economics indicates a complete rethink of the role of economics in financial regulation and risk.

In the introduction to the last book he wrote before his death in October 2010, the great Polish-born American mathematician Benoit Mandelbrot gave a depressing assessment of the state of financial economics. It is, he said, 'as a discipline, [sic] where chemistry was in the sixteenth century: a messy compendium of proven know-how, misty folk wisdom, unexamined assumptions and grandiose speculation' (Mandelbrot and Hudson 2008).

Despite a system of international regulation, which produces thousands of pages of rules and interpretation of rules designed to make the financial system safe, the financial crisis has engulfed the world. The crisis event began with the collapse of a couple of hedge funds operated by Bear Stearns in 2007. The resulting contagion brought down three major global investment banks; one such bank, Lehman Brothers, was entirely destroyed; the others were bailed out, as were many of the world's largest financial institutions. By the middle of 2010, the crisis that had started as a sharp decline in house prices in the US had brought an original member of the eurozone, Greece, to the point of an EU-IMF bailout. By the end of the year, the crisis had claimed a second sovereign scalp: Ireland. While the financial sector in the US has recovered a good proportion of its value, as yet taxpayers have not. And things do not look so rosy on this side of the Atlantic. This was exactly the sort of thing that global financial regulation was meant to prevent. It did not and the global financial regulatory structure failed in its principal task.

So what of Mandelbrot's claim and how does it relate to the efficacy of financial regulation? Firstly, from the outset, the current global approach to regulation of banking firms' capital known as the Basel II framework, promulgated by the Basel-based Bank for International Settlements, had its critics. At the time of its initial publication, several papers identified shortcomings. An excoriating attack by LSE academics (Danielsson et al. 2001), for instance, accurately identified the sources of many of the problems that would subsequently give rise to the crisis which began in 2007 onwards. The opening sentence of that paper stated that the Basel II approach had '... failed to address many of the key deficiencies of the global financial regulatory system and even created the potential for new sources of instability... The proposed regulations fail to consider the fact that risk is endogenous'.

Secondly, and more fundamentally, there is the presumption, central to the Basel II framework, that regulating financial *firms* is the correct approach to regulating a financial *system*. There are two purposes of financial regulation: (i) depositor protection and (ii) prevention of systemic contagion from failure of a single financial institution. The latter aim led to the Basel emphasis on strict prudential capital rules – initially based on credit, market, and operational risk assessments. The resulting framework was an attempt to protect the *system* – the focus of the regulation – by preventing failure of *individual firms*. Yet this is contrary to any sound approach to market performance and capital deployment. Firms must be subject to the 'gale of creative destruction'; they must be allowed to fail, and their capital and business relationships be reallocated, for the system to operate efficiently. As a consequence, the system has *not* been operating efficiently: the regulatory regime has reinforced the capital-related and administrative barriers to entry, entrenching existing players, promoting increasing returns to scale (ie favouring larger firms), and allowing the extraction of economic rent through super-normal profits. The latter are channelled into the 'bonuses' that are now the bane of the political class.

Thirdly, the financial crisis has exposed the analytic underpinnings of the regulation, namely general equilibrium assumptions (in the form of 'DGSE models') that have driven thinking on development of financial instruments and models for regulatory intervention. These models, which form the core of modern macroeconomics, are founded on a series of restrictive assumptions about market conditions that do not stand up even to limited scrutiny. It is the intellectual antecedents of those models, in the form of Arrow-Debreu formulations, that give rise to the assumption that 'market completion' is always beneficial. Arrow and Debreu postulated that, if we have sufficiently comprehensive 'contingent contracts', as they called them – later structured as 'derivatives' based on options pricing mathematics of the mid 1970s – markets would be more 'complete' in that risk would be allocated more efficiently across economic agents. At least they would in a two-period model without any self-interest by those agents (such as banks). Yet if these assumptions were valid, there would be no proprietary trading and no need for an agonized debate about the Volcker Rule to separate banks' own trades (proprietary) from those made on behalf of clients (flow trades).

All this would not be so damaging had not almost every policy advisor, regulator, central bank economist, investment firm economist, MBA graduate, and bank senior executive been schooled in the conclusions that come from these flawed models in which agents' own self-interested behaviour is assumed away. Recently, a group of US and European economists described the problems well (Colander et al. 2009). They called the financial crisis a systemic failure of academic economics, arguing that current approaches to economics '... lose [sic] track of the inherent dynamics of economic systems and the instability that accompanies its complex dynamics... leading [sic] researchers to disregard questions about the coordination of actors and the possibility of coordination failures'.

After the financial crisis hit, most political leaders were left 'flying by the seat of their pants' (Farmer and Foley 2009). Economics was of little or no help. In summary, the global financial regulatory

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architecture was flawed in logic and focus, and was ineffectually implemented. Where does this leave financial regulation?

The problems which the Dahlem Report's authors identify attack the core of financial regulation, already beset with problems. The financial crisis represents both a series of specific *anomalies* and a general *crisis* in terms of the current economic and regulatory paradigms in the Kuhnian sense; re-imagination and reformulation of both are urgently needed. Both must change – both must 'shift paradigms' in Kuhn's terms – to incorporate the behaviour of agents and markets into their models; to link the 'macro' to the 'micro' – the operation of the economy to the behaviour of its constituent actors; to focus on the logic for intervention in the system where risk is endogenous. This refocusing will necessitate changes to the way that risk is modelled both at firm and system level. It will involve drawing on insights from a range of behavioural disciplines and analytical approaches which incorporate complexity from the physical sciences (see, for example, Haldane and May 2011). It will require more and better data, which must be more readily available to supervisors, and better risk visualization technologies for decision makers. Mandelbrot could come back into fashion.

Regulators must begin this reformulation by making explicit their core purpose and regulatory logic: to protect against contagion of the system, rather than to promote the health of individual firms or prescribe their operating or control routines. Firms must be allowed to fail without creating contagious reverberations in the system. The decision that a firm has 'failed' must be based on timely information and well understood and consistently enforced criteria. It must be rapid and managed, minimizing disruption to creditors. Equity holders must be on

their own with residual claims which are satisfied only after the system has been protected. Much work has begun in the area of firm resolution but it has been unimaginative and its progress has been half-hearted. Instead, the principal regulatory response has been to attempt to shore up the existing, flawed approaches to firm-level capital.

Because central bankers lack omniscience, the use of banking regulation to address stability of the economic cycle – the 'big idea' in the UK – is fraught with risk and is unlikely to succeed. Of course, we won't know that positively until it is too late. The government already operates fiscal policy and the central bank can operate monetary policy to effect stability of the economy. But economies will, and should, naturally be subject to cycles. What central banks need is a better understanding of the indicators of economic cycles, such as metrics that incorporate asset price inflation – or what we might call a good system of 'bubble metrics'. What trading and investment banks need – and taxpayers need for them – is to eliminate the *moral hazard* that comes with expectation of a government bail-out, now so clearly reinforced by recent interventions. Governments have exhausted the credibility of posturing their unwillingness to intervene; without wholesale regulatory change, it cannot be recovered. Eliminating the moral hazard requires clearer, market-based incentives for firms to manage their risk effectively and clear knowledge that supervisors and central bankers will not prop them up to minimize their impact on the economy. Instead, if firms satisfy failure conditions, they must expect that supervisors and central bankers will break them up with losses first to their shareholders, then to their bondholders.

In the UK, 'the banking problem' has been kicked to an independent commission as a simple political

expedient. That forum has yet to show that it can either identify the issues holistically or define workable and meaningful solutions. What is really needed domestically, regionally, and globally is the political vision and leadership to recognize that we are fighting, in Toffler's terms, 'third-wave' problems with 'second-wave' ideas and solutions. A massive, generational shift is required to address these problems – problems of fiscal discipline, regulatory structure and implementation, supervisory efficacy, tax complexity and international misalignment, and financial economic modelling and application. As Mandelbrot suggests, economics must progress to being a twenty-first century discipline that seeks its answers in, and validates them with, observed reality. Economists need to step up and accept the need for change; politicians need to lead; and regulators, policy makers, and supervisors need to follow.

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Peter Bonisch is Managing Director of Paradigm Risk, a London-based strategic risk and governance consultancy. He recently co-authored a major report on implementation of effective supervisory control of systemic risk.

'Firms must be allowed to fail without creating contagious reverberations in the system. The decision that a firm has 'failed' must be based on timely information and well understood and consistently enforced criteria.'

CARRNEWS

CARR Discussion Groups

CARR is creating a number of discussion groups to encourage informal but focused discussions among colleagues with related interests. Two such groups have been created – the 'Failure and Resilience Group' and the 'Risk Indicators Group'. A further group is planned to bring together colleagues interested in a number

of risk and regulatory issues relating to retail financial services. Each group meets once per term with a core membership, but meetings are open to all CARR staff. Group discussion will be organized around specific papers, both academic and policy related.

CARR News

Mike Power spoke in February at the European Commission conference attended by 450 participants where the future of auditing and the audit market was discussed. In addition, he also presented a talk entitled 'The audit society and audit trail' to the Expert Group on Public Economics at the Ministry of Finance in Stockholm. Mike has also joined the advisory board of the Financial Services Knowledge Transfer Network.

Bridget Hutter participated in the Expert Forum on Integrative Risk Management at the Swiss Re Centre for Global Dialogue, Rüschlikon/Zurich, in November 2010. In January of this year, Bridget, a member of the 2010-11 Genest Global Faculty, gave the lecture 'Risk regulation – an interdisciplinary research approach' at Osgoode Hall Law Faculty,

York University, Toronto. In February and March, Bridget was a Visiting Professor at The Netherlands China Law Centre, Amsterdam Law School, University of Amsterdam.

CARR is delighted to announce the appointment of two Senior Visiting Fellows, **James Strachan** and **Jeremy Lonsdale**. James sits on several boards, including the Financial Services Authority and Legal & General plc. Jeremy is Director General, Value for Money, at the National Audit Office. Both are senior and respected practitioners in their respective fields, and their advice and input into CARR's evolving agenda will be invaluable.

Recent CARR Discussion Papers

lse.ac.uk/researchAndExpertise/units/CARR/publications/discussionPapers.aspx

DP 68 Quality of Life and Risk Conceptions in UK Healthcare Regulation: Towards a Critical Analysis

Matthias Benzer, March 2011

DP 67 The Failure of a Failure Regime. From Insolvency to De-authorisation for NHS Foundation Trusts

Liisa Kurunmäki, Peter Miller, March 2011

DP 66 Self-Reporting Untoward Events to External Controllers: Accounting for Reporting Failure by a Top Tier Chemical Plant

Julien Etienne, September 2010

Publications

Democracy and Dissent: The Challenge of International Rule Making

Frank Vibert, Edward Elgar Press 2011

Visualizations of Risk and Governance: Some Observations on Change

Bridget M Hutter in *Risk and Policy in East Asia* by Raymond K.H. Chan, Mutsuko Takahashi and Lillian Lih-rong Wang (eds), Ashgate 2010

Surveying Empirical Legal Research: Occupational Safety and Health

Bridget M Hutter in *The Oxford Handbook of Empirical Legal Research* by Peter Cane and Herbert Kritzer (eds), Oxford University Press 2010

CARR Seminars 2010/11

16 November 2010

Dr Henry Rothstein
King's College, London

Crystal Balls or Christmas Baubles? Risk-Based Policymaking and the Institutional Modulation of Risk

30 November 2010

Dr Vibeke Schou Tjalve
Dr Karen Lund Petersen
Copenhagen University

Risk, the State and the Public: Theorizing the Politics of 'Shared Responsibility'

1 February 2011

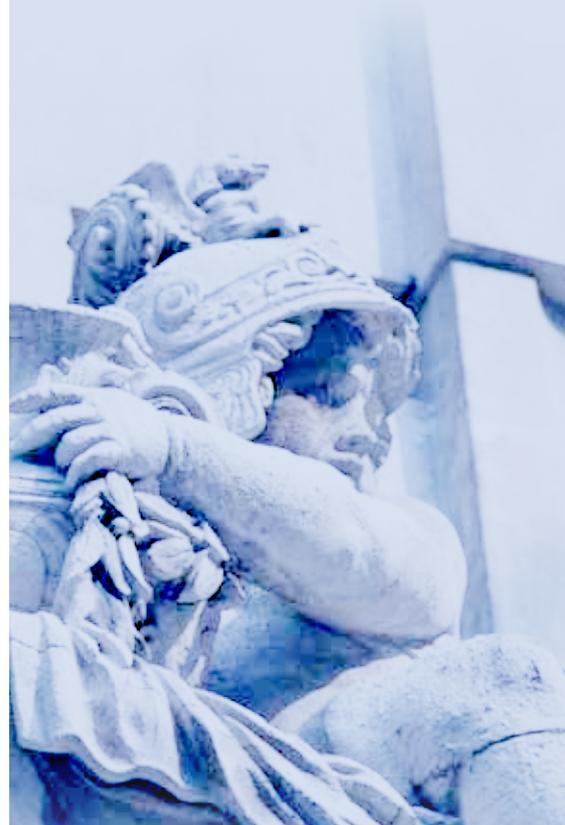
Professor Marie-Laure Djelic
ESSEC Business School

When Limited Liability was (still) an Issue – Conflicting Mobilizations in Nineteenth Century England

15 March 2011

Dr Liz Fisher
Oxford University

Models and the Evaluation of Risk Regulation Decision-Making



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Dr Martin Lodge

Deputy Director, CARR; Reader in Political Science and Public Policy, Government Department

Comparative regulation and public administration; Government and politics of the EU and of Germany; Railway regulation in Britain and Germany; Regulatory reform in Jamaica.

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Peacock Fellow

Regulatory treatment of risks, quality of life, and longevity in the health sector.

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Jeremy Lonsdale – Visiting Senior Fellow National Audit Office

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