

It's all about risk, isn't it? Science, politics, public opinion and regulatory reform

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Like most Western democracies, Australia has seen constant business complaints about the regulatory burden and the need for reform. Governments have been sympathetic to these concerns and initiated numerous enquiries into ways to reduce red tape. One, published by the Regulation Taskforce in 2006, argues that a key problem is that Australians are becoming 'risk averse'. Drawing on research into the regulatory aftermath of major disasters, this paper argues that the Taskforce's approach is over-simplistic. Risk has at least three dimensions: actuarial, social and political. Proliferation of rules and regulations in the aftermath of a major disaster can be as much, if not more, the product of political risk aversion as it is of social and actuarial assessments. 'Smart' regulation, which aims to reduce risk while avoiding an excess of rules, must address all three dimensions. The paper explores when and how there can be a 'smart' response to major disaster.

Introduction

Australian businesses, large and small, complain about over-regulation. For business, regulation is like a bureaucratic poison ivy that can creep up and smother companies' operations one by one, ultimately strangling an economy. Concern about the suffocating effects of regulation have most recently been articulated in 'Rethinking Regulation: Report of the Taskforce on Reducing Regulatory Burdens on Business' (Regulation Taskforce 2006 - colloquially known as the 'Banks Review' after its principal author, Gary Banks, Chair of the Australian Government's Productivity Commission). Explanations for over-regulation rehearsed in this report are familiar: excessive red tape; bureaucratic 'nit-picking'; and public service empire building. Complementing them, however, is a further and emerging thesis that politicians, bureaucrats and the general public are becoming unnecessarily fearful, risk averse and litigious (Regulation Taskforce 2006; see also Blair 2005). In our view, none of these accounts goes to the heart of the problem. Rather, we see over-regulation as the product of two sets of opposing (and deep-seated) forces in contemporary capitalist

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democracies. The first is the need for business enterprises to innovate and take risks if an economy, and hence society, are to thrive. The second is constant pressure on political representatives to minimise risks and harms for citizens and associated promises that these demands will be met. Each set of forces has vested interests supporting and invoking them (e.g. businesses being pro-risk, unions and consumer groups anti-risk). Disasters (e.g. industrial explosions and corporate collapses) can disturb the equilibrium of such forces and become a major source of regulatory proliferation.

The starting point for this paper, therefore, is to argue that the 2006 Banks Review was just one event in a cyclical process, characterised by oscillation between demands to regulate and to de-regulate. Responses to disasters can play a key role in renewing and reinforcing this cycle. For instance, a harmful event (e.g. an explosion in a chemical plant) prompts enquiries into the circumstances and causes. Such enquiries typically recommend a range of regulatory and other responses. Rapid proliferation of these and other regulatory 'vines' (i.e. responses to other incidents) gives rise to complaints about enterprise being stifled. In response, government taskforces search for ways to reduce the red tape – for instance, by pruning regulations and introducing sunset clauses. Should a new disaster occur, however, unions, the media and other commentators invariably argue that the surge of de-regulation had left workers, consumers, investors and other relevant parties unprotected (Haines and Sutton 2003). To continue our metaphor, the more effort that has been put into clearing the regulatory ivy (e.g. following enquiries into over-regulation), the more vigorous the regrowth that can occur. Recognition of this problem has prompted searches for alternatives. States and business groups have expected (and funded) academic researchers to provide 'scientific' resolutions. Consensus from a range of studies is that the key to moving away from the regulate-deregulate cycle is to embrace a 'smart', or 'responsive' approach (Ayres and Braithwaite 1992; Braithwaite 2000; Gunningham and Grabosky 1998; Gunningham and Johnstone 1999).

The key to smart regulation¹ is to be outcome-based and focus on problem identification and solving. At least two elements set it apart from more traditional

¹ We acknowledge the possibility that not all the theorists mentioned in the preceding paragraph (apart of course, from Grabosky and Gunningham) would want the label 'smart' to be attached to their preferred approach to regulation. However, we do see it as a more appropriate descriptor than, say, terms such as 'responsive' regulation.

approaches. The first is that both regulator and regulatee focus not simply on rule-making and rule-observance but on identifying, assessing and taking action to manage specific potential harms (Black 1997; Gunningham and Grabosky 1998; Gunningham and Johnstone 1999; Sparrow 2000). Central to smart regulation's problem-based approach is an *actuarial* understanding of risk-assessment and risk-management that puts an emphasis on the *probability* and *impacts* of adverse events. Second, the smart regulator should be prepared to be flexible rather than adopting a 'command and control' outlook. Theorists argue that regulators should draw on a graduated pyramid of responses, with more persuasive measures (assuming client capacity for virtue) preceding punitive reactions to non-compliance. Smart regulators must also be prepared to embrace co-regulation with other partners (e.g. non-government organisations and professional associations) in order to set broader incentives for the regulated entities and share the task of regulation (Ayres and Braithwaite 1992). In sum, smart regulation calls for a sustained focus on identifying and reducing actuarial risk rather than simply focusing on promulgating rules, and a preparedness to be flexible in order to achieve identified risk reduction goals.

Smart regulation now is widely accepted and routinely endorsed as the approach regulators should aim for (e.g. Regulation Taskforce 2006). Efforts to translate it into practice have led to innovations such as the 'safety case' approach to reducing workplace hazards and the tendency to phase out routine government inspections and tests in favour of enforced (or audited) self-regulation (Hopkins 2001).

This paper explores whether smart regulation can be a panacea for regulatory proliferation in the wake of disaster events. We focus on the regulatory aftermath of three recent event-clusters: the Esso Longford gas explosion in 1998; the collapse in 2001 of a major Australian insurance company (HIH); and the terrorist attacks on critical infrastructure on September the 11th, 2001 in the United States (hereafter referred to as '9/11') and in Bali, Indonesia (on October the 12th, 2002). Each of these disasters prompted almost irresistible demands that governments ensure such events did not occur. Such demands can easily lead to the introduction of masses of new rules and regulations. A disaster and its aftermath therefore provide a unique test of whether smart regulation can be a cure for over-regulation. Our specific question is 'Is it possible for the response to a disaster to take the form of smart regulation rather than the mere proliferation of rules, and in what circumstances is a smart regulatory response

possible?². Our research methods have included both document analysis (e.g. of laws, and accounts of disaster events) and interviews with relevant regulators and businesses. Our findings suggest that possibilities for adopting the smart response are more limited than its advocates suggest. Both elements of this approach – namely, (1) adherence by politicians and regulators to a purely actuarial approach to risk assessment and management, and (2) a non-legalistic partnership and problem-based approach to regulation – can be difficult to achieve.

This paper focuses on why the first element (i.e. pure actuarialism) can be problematic. We argue that an underlying premise of the actuarial approach – namely, that risk assessment and management can be captured entirely by cost-benefit and other ‘objective’ technical formulas – glosses over the complexities of this phenomenon. Risk has at least two other dimensions, which we term ‘socio-cultural’ and ‘political’. Smart regulation is possible when all three dimensions of risk (actuarial, socio-cultural and political) align in specific ways. Our data suggest that when a major disaster has occurred, this alignment may be more the exception than the rule. In the absence of an appropriate alignment of the three forms of risk, regulatory proliferation is likely and smart regulation may not be an option.

² This forms part of a larger research program aimed at providing an empirical basis for assessing ways to balance political, media and public demands for reform in the wake of disasters with industry’s need for realistic and achievable compliance.

Actuarial, social and political risk and the dynamics of post-disaster regulatory reform

Table 1 outlines our three ‘ideal types’ of risk, including definitions and hypothesised sources of regulatory proliferation.

Table 1 Brief background to three risk ‘ideal types’ (actuarial, social and political), underlying drivers of regulatory proliferation and their corresponding research traditions

Risk ‘ideal type’	Definition of risk	Drivers of regulatory proliferation
Actuarial risk	Impact and likelihood of a category of harm.	Poor science – laws not consistent with evidence-base on risk (e.g. over-estimation of likelihood or impact) (e.g. Sunstein 2005; Viscusi 2000; Viscusi and Zeckhauser 2003)
Socio-cultural risk	Perception of instability and disruption to established social patterns (e.g. threats to valued norms)	Tension or conflict between human groupings (differentiations in norms/interests/identities/ beliefs etc.) (Durkheim 1966; Douglas 1966)
Political risk	Threats to political power and survival	Legitimation crises (Habermas 1979)

Actuarial risk

The term ‘actuarial risk’ refers to risk understood purely in terms of the impact and probability of a certain category of harm. Actuarial risk assessment involves quantifying both the impact and likelihood of an adverse event (e.g. industrial explosion, fire, traffic injury and so on) so that measures can be put in place to reduce its likelihood and/or associated harms. Actuarial risk assessment focuses on being rational rather than emotive or subjective. Many see it as the preferred way of thinking about risk as societies become more ‘enlightened’ and achieve technical mastery over the physical environment (Table 1).

Under smart regulation both regime planning and implementation are premised on an actuarial conception of risk, where risks are objective and calculable and can be

made the province of risk experts. It sits behind constant calls for evidence-led regulatory regimes (Sunstein 2005; Viscusi 2000) and for decision makers to ensure regulations are proportionate to the risk faced. From an actuarial risk point of view, regulatory proliferation should be guided by advances in science, with approaches simply being kept up-to-date with advances in the evidence-base.

Socio-cultural risk

The concept of socio-cultural risk is more complex and requires understanding of two points. First, risks and dangers to any individual are posed not just by the physical environment but also by other people. Second, the best way for humans to be protected from harms in the physical environment and from threats posed by other people is to be part of a cohesive and effective group (or 'society'). Humans have an inbuilt sense that, if the integrity of their group is at risk, they themselves will be at greater risk. Properly socialised people are constantly monitoring and scanning for group risks (i.e. factors that threaten group cohesion and may render it no longer functional or protective) (see Table 1). We term this type of risk assessment 'socio-cultural'. Following Durkheim (1966), Douglas (1966, 1992) outlines the various ways societies 'do' socio-cultural risk assessment and understand order and disorder. From the socio-cultural view, risks are given meaning and significance by the society itself, with risks being defined and measured in the context of the prevailing social order (Durkheim 1966; Douglas 1992). For Douglas, while our physical and social environments present numerous hazards, socio-cultural processes determine which ones are perceived as the greatest dangers. Socio-cultural factors can mean that societies give little attention or salience to event possibilities that would be defined as high risk purely on an actuarial basis (Lupton 1999).

In contemporary societies we often fail to distinguish socio-cultural from actuarial risk assessment and/or try to treat socio-cultural risk assessment as if it were actuarial. Disasters can create a sense of social instability and insecurity. New laws and regulations that signal 'something is being done' and 'this will never happen again' may be mainly effective in addressing socio-cultural risk, even though their rationale is couched in actuarial terms.

Political risk

Political risk relates to the complex challenges confronting representatives in democratic, capitalist societies (Habermas 1979). In essence, politicians are elected on the basis that they will ensure citizens' wellbeing and security. The key to achieving this is to successfully manage and oversee two key aspects of society – namely, the economy and the public sector, including shared physical infrastructure (roads, railways etc.) and social infrastructure (e.g. health, education, welfare support, 'law and order'). By their nature, these two tasks can involve contradictory demands. Ensuring a healthy, competitive economy often requires governments to reduce or restrict direct and indirect taxes on business, particularly in an era of globalisation where larger firms can shift their activities offshore if the 'fiscal burden' has become too high (Harvey 1989). However, reducing or restraining tax levels may mean that governments have trouble fulfilling promises to maintain and extend roads, railways, hospitals, schools, universities, policing and other infrastructure. This means that, as Habermas (1979) points out, governments in late capitalist democracies constantly risk loss of credibility and legitimacy: they face 'legitimation crises' (see Table 1).

Political risk is of direct relevance to the problem of over-regulation. Ultimately, it is politicians who determine the extent and form that regulation will take. Politicians also have a pivotal role in managing both actuarial and socio-cultural risk in contemporary societies. Inevitably, their role involves promoting risk as well as trying to reduce it. In relation to the economy, for example, politicians must maintain an environment where risk-taking can occur. As Karl Marx (1976 [1867]) points out, capitalism involves unending risk-taking with capital, with people and with the environment. Both the pace and scale of such risk-taking has increased massively in the late-modern era (Harvey 1989)³.

In the socio-cultural sphere, however, politicians often focus on reducing perceived risks (such as those posed by drug-dealers, other criminals or terrorists) and on protecting the public. Indeed, one of the key ways that politicians can offset threats to their own perceived legitimacy is by 'playing up' their role as guardians of social order (e.g. through 'law and order' campaigns). This means that the contemporary politician's role in relation to risk is an ambiguous one. Politicians need to be seen to be

³ The tensions and ambivalences underlying political risk are heightened by rising complexities both in actuarial and socio-cultural assessments of risk (Beck 1992).

protecting society from a range of risks and will lose legitimacy if levels of public insecurity become too high. To win votes, however, politicians also need to promote an economic system that is based on risk-taking. This helps explain why, at times, politicians seem to be deliberately emphasising some risks (e.g. risks to Australia posed by asylum seekers) while playing down others (e.g. risks associated with corporate and other business activity).

One of the key sources of regulatory proliferation is concern about political risk. We argue that smart regulation can only occur if and when a purely actuarial approach does not entail political risk. Each of our disaster events posed political risks. Harms from the HIH Insurance collapse included losses to policy holders and others of up to Aus\$5.5 billion. HIH's collapse drew attention to major risks being taken with corporate capital in Australia and the failure of government to manage such risks adequately. The Longford Esso gas plant explosion killed two workers and led to disruption of the gas supply to Victorian businesses and households for approximately two weeks. Longford exposed significant risk within an industry sector as well as a lack of measures to protect both workers and critical infrastructure. While the considerable harms of '9/11' took place on foreign soil, the impact was clearly global. Terrorism raises the spectre of attack by 'dangerous outsiders' and the need for government to manage this threat. Isolated terrorist events need not pose a threat to political legitimacy. However they do provide opportunities to reinforce a government's protective role, and hence shore up its public support. Overall, governments must respond to disasters in ways that deal not just with actuarial risks (smart regulation) but which also ward off political risk. As will be illustrated shortly, our findings suggest, in the aftermath of disaster, that regulatory proliferation is a more common development than the emergence of smart regulation. The latter approach is not necessarily effective in dealing with the political risks that arise in these contexts.

Findings

Longford

The Esso Longford gas plant explosion (on September the 25th, 1998) presented an immediate political crisis for the Victorian government of the time. However, due to a

number of factors (to be discussed), the crisis was manageable, and smart regulation did emerge. We argue that, for a time at least, the regime resulting from the Longford Gas explosion in Victoria could be viewed as a 'regulatory nirvana', where social and actuarial narratives of risk facilitated a political response that produced comprehensive and far reaching regulatory reform. At a national level, the reforms in the three jurisdictions analysed (Victoria, NSW and the NT) suggest that, while smart regulation is possible, it is context-specific. In particular, a smart regulatory response requires both a political focus on a tightly bound risk category and trust in the expertise of the regulator and associated experts. Reform success requires a matching of actuarial and political risk.

For Victoria, the proximity of the disaster and experience of the consequences helped generate political support for wide-ranging reforms. In particular, being deprived of natural gas for two weeks meant considerable hardship across the state. Problems ranged from cold showers and no heating (the incident occurred in late winter/early spring) to closure of businesses (such as restaurants) reliant on natural gas. In the context of interviews, the researchers were struck by the regulator's confidence that, whatever the compliance standards and demands imposed on industry, it would continue to enjoy political support.

Esso tried to blame workers who were on site on the day for the incident. It claimed, for instance, that they had not observed internal rules and procedures, of which there were plenty. However, the Longford Royal Commission (1999) made it clear that this was not an adequate explanation. In ways consistent with public and industry views, it documented shortcomings in the internal self-regulation of Esso, including an over-proliferation of rules throughout the company. The Commission then identified the 'safety case' approach, a co-regulatory model, as international best practice in the major hazards domain. The safety case regime subsequently as developed in Victoria conforms largely to the smart regulation model in terms of embracing a nuanced and innovative approach to identifying and reducing risks. There is a clear focus on demonstrated problems and demonstrable risk reduction outcomes, with practical measures developed to monitor achievement (for details see Haines 2006a).

The Commission also noted that an independent and well resourced regulator would be required to administer the new regime. It recognised that given the complexities of chemical plants and other Major Hazard Facilities (MHFs), smart

regulation would be highly challenging and involve extensive and sustained monitoring. Following the state government's acceptance and endorsement of Commission recommendations, the major hazards narrative was translated into a dedicated regulatory regime (*Occupational Health and Safety (Major Hazard Facility) Regulations 2000*). A Major Hazards Unit (MHU) was created within the state's main safety regulator to administer it. Each major hazard site in Victoria now was required to register with this Unit. The Unit was stocked with experts – 'systems-oriented people' (Interview 4, p.4) who were highly regarded both by industry and by government. It was accorded extensive powers to refuse licenses to non-compliant firms. As noted earlier, the MHU enjoyed strong political support with key personnel confident that businesses unable to comply with its requirements would need to move elsewhere, irrespective of their size and of any attempts they might make to lobby government.

Overall, in post-Longford Victoria congruence of our three forms of risk was observed. The regulator was able to work with dedicated professional groups (industry engineers) who shared its desire to avoid disaster and ensure compliance. The finite number of sites to be regulated made it feasible (but still challenging) for the MHU to liaise systematically with industry. Representatives of residential communities close to MHF sites also identified intensive engineering attention to major hazard risks as the best way to minimise risk and avoid another major incident. Under the safety case model local communities were formally required to be involved in the scrutiny of sites. These views from major stakeholders reflected a congruence between socio-cultural and actuarial assessments of risk.

In contrast to Victoria, NSW and the NT saw delayed and less radical reform. Clearly, the fact that a disaster had occurred at a distance and in a different State was important. Relevant safety issues were a State and Territory (as opposed to a Commonwealth) responsibility and concerns expressed by local populations was limited. The comparatively low level of public and political concern meant that no compelling narrative of risk demanding wide-ranging reforms was generated. In interviews, the NSW regulator acknowledged the need for major hazards regulation, but stated that it saw itself as short on the resources and lacking the political support it would need if it were to fully adopt Victoria's licensing and safety case based regime. As another respondent pointed out, the NSW Legislative Council, in fact, deferred major hazard draft legislation in order to deal with potential threats highlighted by a 'pit bull terrier incident'. Clearly lack of political priority delayed progress of MHF

regulation in NSW, with draft legislation not released publicly until November 2006 (Occupational Health and Safety Amendment (Major Hazard Facilities) Regulation 2006 Draft), some six years after Victoria had implemented its regime.

Our research suggests that State and Territory-based regulation of major hazards is problematic. A purely actuarial or 'smart' assessment would suggest that NSW has similar levels of major hazard risk as Victoria (e.g. similarly old plants and high industry activity, some of it close to residential communities), and therefore is in need of reforms analogous to those implemented in Victoria. National arrangements (notably a Major Hazard Facilities Working Group and the National MHF standards body within the Australian Safety and Compensation Council, formerly the National Occupational Health and Safety Commission), helped nudge NSW and other States to fall into line with a safety case approach, but could not bring about the needed changes. Overall, reforms across major hazard jurisdictions were driven more by political (and socio-cultural) processes than by purely actuarial logic. Nation-wide adoption of smart regulation in the major hazards domain might be desirable but political and jurisdictional factors render this difficult to achieve.

A final point needs to be made in relation to the regulatory aftermath of Longford in Victoria. Smart regulation emerged, but for several reasons may not last. Firstly, the level of expertise required by the regulator meant that relevant staff were and continue to be in high demand. As other jurisdictions have gravitated toward the safety case model, MHU personnel have moved on. Further, organisational changes within WorkSafe Victoria suggest that the MHU's privileged and protected status is under threat. Finally, industry is becoming more vocal in its demands for greater clarity about what constitutes compliance, and the power balance between industry and regulator may be shifting in industry's favour. Greater specificity and certainty is being asked for, and Victoria's MHU is issuing ever increasing numbers of guidance notes. In this sense, then, there is evidence of the regulatory cycle beginning a trajectory back towards greater levels of prescription. Business groups and reform bodies often tend to assume that smart regulation can be equated with a 'light-handed' approach, where regulators impose minimal financial and other resource demands on relevant industry (e.g. Business Council of Australia 2005; Regulation Taskforce 2006). However data on the post-Longford experience in Victoria in fact suggest that the safety case approach imposed high demands on all participants. In our view, such a regime may prove vulnerable to cost cutting as memories of the Longford trauma fade.

September 11, 2001 terrorist attacks in the United States ('9/11')

Compared to Longford, risks and challenges highlighted by the '9/11' terrorist incident were quite different. Put briefly, a smart regulatory response was not initially viable and regulatory proliferation was considerable. In the immediate aftermath of terrorist attacks, socio-cultural and political risk took primacy over actuarial assessments. Reassurance of the public and of a key trading partner (the United States) provided the impetus for reform. Moreover, our analysis suggests that political manipulation of socio-cultural risk cannot be ruled out. Reform was driven as much by the need to provide socio-cultural reassurance and to reinforce political legitimacy as by 'objective' actuarially-based assessment and reduction of risk.

The 9/11 attacks generated immense international pressures on the Australian government and industry (a phenomenon that did not occur following Longford). Key Australian government concerns were economic (e.g. to protect trade with the United States) and political (to retain strong diplomatic relations with that country). For Australia's national transport industry regulator, the economic imperative was to ensure minimal disruption to national and international trade and transport. At the same time, however, political sources both local and overseas were demanding heightened protection against 'unlawful interference'. Some reforms, particularly in relation to security at seaports, in fact initially emanated from the United States via the *Safety of Life at Sea Convention 1974* and the *International Ship and Port Facility Code* of the International Maritime Organisation. Its pressures greatly affected national regulations whose focus was on the risk of attacks on airports and seaports. Particularly relevant in this context were the *Aviation Transport Security (Consequential Amendments and Transitional Provisions) Act 2004* (Cth) and the *Maritime Transport and Offshore Facilities Security Act 2003* (Cth). Such new regimes interfaced with broad and ever changing counter-terrorist policy, agency networks and legislation. On the surface, anti-terrorism reforms implemented for air and seaports post-9/11 appear similar to the post-Longford safety case regime implemented in Victoria. Both were co-regulatory and emphasised joint site/regulatory development of processes and procedures. Both seaports and airports were required to win approval from the regulator (in this case, the federal Department of Transport and Regional Services) in order to continue operations, just as hazardous sites needed to have their safety cases approved by WorkSafe Victoria.

Closer assessment of security plans, however, confirms that actuarial assessment of terrorism risks is much more difficult than assessment of the possibility and likely impacts of 'accidents' on major hazard sites. To begin with, there was little consensus among 'experts' on how the terrorism threat could be identified, assessed and reduced. Even in relation to industry sites, feedback from interviewees suggested that the risks and possible impacts of attacks by external sources seeking to inflict maximum harm in an unpredictable ways were impossible to capture actuarially. As one security commentator (Windeyer 2006) has put it: 'terrorists are smarter than the average bolt'. In addition, as one regulator pointed out (Interview 16, p.17), economic factors meant that even when increased risks could be measured actuarially, the relevant regulator (or industry body) often could not 'follow through' on such an assessment – for example by shutting down an airport.

Faced with enormous challenges in trying to follow an actuarial approach to security, regulators and industry attempted to 'tame' the risk through narrowly-focused risk narratives, wherein uncertainties were resolved by providing social assurance (i.e. introducing high profile regulations that gave the public visible evidence that it was being protected) and economic imperatives ('security is good for business'). To cope with challenges associated with the fact that terrorist harms were intentional, while still working with an 'actuarial' template, regulators had replaced risk-management with a so-called 'intelligence-led/risk-based' approach and on 'vulnerability analysis' and 'mitigation' at the site level. However, given the potentially limitless targets terrorists could select and the methods they could use, actuarialism could not, in fact, help regulators or regulatees determine appropriate levels of management of site risks (Haines 2006b). As a result, costs for government and industry escalated.

Unease among the travelling public inevitably heightened political risk. As a result, regulators often were given limited time to respond to ministerial and prime ministerial demands, and impossibly short turnaround times (two or three hours) to comment on major reform proposals. It was not surprising, then, that there were multiple and constant amendments to the legislation and to regulations, some generated by 'mini' public crises, others by the need to repair poorly-worded legislation rushed through parliament. In contrast to Longford, political support for regulators in terms of relying on their advice was seriously constrained. Where expertise was employed, it was in the form of major technical reviews by high profile outsiders (e.g. Wheeler 2005), whose recommendations would generate extra pressure for regulators.

For example, recommendations made for airports were initially assumed to apply automatically to seaports. When difficulties arose in their implementation at seaports further urgent reform was necessitated. A key concern for regulators faced with multiple and pressing demands was to please the minister responsible for their portfolio and deflect criticism from other authorities (for example, Treasury or Tax Office demands for regulatory simplicity).

Both industry and government agreed on the need for public assurance (e.g. confidence in security) to sustain business viability. Hence, regulatory initiatives focused on addressing socio-cultural rather than actuarial risk. Visible signs of security (e.g. higher rates of baggage screening) were a focus of many reforms – especially the more prescriptive requirements. As one regulator noted (Interview 16, p.16), such measures assured the traveling public (e.g. screening of passengers at entrance to terminals), while other forms of risk in less visible but nonetheless vulnerable areas (e.g. tonnes of air cargo situated under passengers during the flight) were allocated lower priority.

In summing up the nature of security reforms, while the need for objective, actuarially-based assessment of risk and a ‘smart’ regulatory approach were formally endorsed throughout the reform process (e.g. ports and airports were required to develop security plans), the real priority was political and socio-cultural risk (even if, at times, this involved ‘playing up’ the threat of terrorism).

HIH

The collapse of Australia’s second largest insurer, HIH Insurance, had immense financial impact and received substantial public and media attention. Financial losses were estimated at between Aus\$3.6 and \$5.5 billion (Black 2006; Haines 2006c), including loss of disability pensions and superannuation assets (Haines 2006c). There was considerable political risk associated with the financial collapse and scandal. Both in terms of its size and repercussions, this event posed a major threat to the legitimacy of the Australian government and Australian finance and credit systems. As a subsequent enquiry (HIH Royal Commission 2003) revealed, however, the finance sector is vast and complicated, and risks and responsibilities are fragmented. Given these complexities, substantive agreement on the nature of relevant risks and on a

definitive actuarial formula that could provide a basis for managing it proved impossible to achieve.

Post-HIH reforms saw a swing in the regulatory cycle towards greater levels of government intrusion and prescription. Viewed as a whole, reforms to the Australian Securities and Investments Commission mandate that followed the collapse of HIH were tied to specific risk narratives (e.g. problems of conflict of interest, lack of independence of the board and auditors, and failure of accountability). Once this 'taming' of relevant problems had been achieved, reforms were put in place that purported to reduce identified risks. Ambivalence towards regulation and risk in this area was evidenced by the fact that extensive re-regulation in the aftermath of HIH was quickly followed by major de-regulatory pressures (e.g. Regulation Taskforce 2006). One senior officer in the major financial regulator was well aware of this, noting in the interview (Interview 6, p.8) that pressures on his organisation were inherently political.

The two regulators most affected by HIH were 'young' Commonwealth agencies formed in the aftermath of the Australian Financial System Inquiry in 1997 (also referred to as the 'Wallis Report'): a high profile initiative to streamline regulation in the financial sphere. In essence, following the 1997 report, regulation had shifted from a service and product-specific regulatory arrangement to a functionally-based framework, wherein a newly formed Australia Prudential Regulatory Authority (APRA) would serve as the prudential regulator and the Australian Securities and Investments Commission (ASIC) would oversee business conduct internally and in its relationships with shareholders and creditors (see Black 2006, p.5).

At least in terms of APRA's regulation of the general insurance industry, an actuarial approach was feasible in a number of ways. It had a clearer regulatory goal – that of 'protecting policyholders' – than ASIC. Because its focus was on a single industry, it was responsible for a more manageable number of firms. In this context it had begun to develop a clearly defined risk-management system to direct oversight of companies.

In the immediate aftermath of HIH, APRA's supervisory style and methods nonetheless had been criticised by the Royal Commission. In response to the Commission's recommendations that greater attention be paid to company financial soundness, APRA accelerated the development of its Probability and Impact Rating System (PAIRS) and its Supervisory Oversight and Response System (SOARS). Using

these two mechanisms (accompanied by necessary restructuring of the organisation itself) the regulator was eventually able to better justify (both to government and industry) its targeting of resources and the levels of oversight it imposed.

For ASIC, in contrast to APRA, shifting to an actuarial model was not possible. To begin with, while the Royal Commission had identified APRA's failure as a regulator as largely the product of shortcomings in its supervisory and risk-management techniques (where imminent signs of a collapse were not picked up or responded to), it portrayed ASIC's main problem as lying in a deficiency of specific rules. Responsibility for financial regulation in Australia has always been understood as being shared between companies themselves (through reporting requirements), the accountancy profession (through their role in auditing company accounts) and the government regulator (mainly in prosecuting for criminal cases of fraud). The emphasis post-HIH was on the lack of corporate and individual director accountability, as well as on potential conflicts of interest between company boards and executives, and accountancy firms, executives and the board. So, reforms emphasised the need for rules that would enhance auditor and company board independence and would increase the personal liability of delinquent directors (Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act 2004 (Cth)).

The HIH Royal Commission's emphasis on tighter rules and more vigorous enforcement made it politically difficult for ASIC to emulate APRA and move toward a smart regulatory approach. The complexity of ASIC's regulatory mandate was matched by a high level of political intrusiveness because HIH's collapse had posed a major threat to the legitimacy of the government's company law policies. ASIC was caught in the middle of competing demands to reduce red tape while also responding to political and public demands for assurance and security. Our research suggests that ASIC was deeply enmeshed in the regulate/de-regulate cycle and that the HIH collapse merely exacerbated its dilemmas.

Conclusion

In Australia, as in most advanced capitalist democracies, there is widespread concern about economic and other costs associated with the proliferation of rules and regulations. A shift to 'smart' regulation that focuses not so much on the proliferation of

rules but on actuarial assessment of risk, is seen as the solution. This paper, based on documentation and analysis of regulatory responses to three major disasters, casts doubt on this assumption. An underlying premise of the actuarial approach to risk-management – namely, that risk can be entirely captured by ‘objective’ and actuarial formulas such as cost-benefit analysis – glosses over the complexities of this phenomenon. Risk has at least two other dimensions, which we term ‘socio-cultural’ and ‘political’. ‘Smart’ regulation is possible only when all three dimensions of risk (actuarial, socio-cultural and political) align in specific ways. Our data suggest that when a disaster has occurred, this alignment may be more the exception than the rule. In the absence of appropriate alignment of the three forms of risk, regulatory proliferation (the ‘ivy effect’) is likely and ‘smart’ regulation may not be an option.

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