The role of insurance in building resilient communities

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Abstract

Following the 2010/11 flood and cyclone events many Australian households found themselves uninsured or underinsured. Some claimants were successful whilst their neighbours were not due to variations in the definitions of flood between insurers. Combined with publicised cases of poor claims handling and a lack of communication with policy holders, the implications were of a broad market failure. This paper highlights the conflict that has developed between the aims of the National Disaster Resilience Strategy and recent recommendations by the National Disasters Insurance Review (NDIR) for Federal Government intervention in the insurance market. This paper cautions against its recommendations to force insurers to offer flood cover, to establish Government funded premium and reinsurance discounts and to provide a reinsurance scheme also guaranteed by the Federal Government. The appropriate roles of the public and private sector and role of charitable funds is explained. International experience in flood insurance from similar developed countries is highlighted in order to communicate lessons for Australian policy makers. Those lessons are the importance of enhancing resilience through mitigation action and avoiding the moral hazard that arises through risk transfer to the Government.

Keywords: *Insurance, Resilience, Flood, catastrophe financing, Australia*

Introduction

Whilst insurance plays an important role in enabling rapid physical recovery following a disaster event, it should be viewed it as a risk management tool of last resort behind efforts at mitigation. Wherever possible, we should endeavour to reduce our exposure to a hazard, before transferring it on to a third party. Despite the logic in the desire to try to avoid losses before insuring against them, a greater role for the public sector in providing catastrophe financing is often widely debated following disaster events.

This paper looks at this debate following the November 2010 to February 2011 flood events ('2010/11 events') in Australia. It argues against the Natural Disasters Insurance Review (NDIR) recommendations to force insurers to offer flood cover, to establish Government funded premium and reinsurance discounts, and to provide a reinsurance scheme also guaranteed by the Federal Government. An examination of the many reviews and inquiries[1] that followed the 2010/11 events will highlight the existence of gaps and inconsistencies in claims handling regulations, the problems with the definition of flood, and the availability of flood mapping. This paper argues there is no evidence of a broad market failure to provide insurance that would justify government intervention in the market. Beyond identifying the lack of justification for mandatory cover, a perusal of relevant international experience gives a stark warning to policy makers seeking a greater role for Government in the flood insurance market. Where the national policy objective is the promotion of resilience, it is not appropriate to distort the risk mitigating effects of actuarially sound premiums. Accepting those recommendations made by the NDIR will impede the development of communities resilient to the risk of flood.

Summer of Disasters

The spate of natural disasters to hit Australia and the wider Pacific region over the period November 2010 to February 2011 was unprecedented. The numerous events overwhelmed not only communities and governments at all levels, but significantly stretched the capacity of some insurers to respond efficiently and effectively. A particularly strong La Niña event led to widespread flooding across much of Eastern Australia. In Queensland all 73 Local Government Areas (LGAs) were disaster declared. A large number of Victorian and New South Wales LGAs also experienced long lasting flood events which isolated many communities. Whilst many towns

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[1] See Treasury Consultation Paper, Reforming Flood Insurance: Clearing the Waters http://www.treasury.gov.au/contentitem.asp?ContentID=2039&NavID= ; Queensland Floods Commission of Inquiry http://www.floodcommission.qld.gov.au ; Natural Disasters Insurance Review www.ndir.gov.au ; House of Representatives Standing Committee on Social Policy and Legal Affairs Inquiry into the operation of the Insurance Industry during disaster events http://www.aph.gov.au/house/committee/spla/insurance/index.htm

remained submerged, Queensland was impacted by Tropical Cyclone Yasi. Before the end of this 'summer of disasters' Western Australia had experienced flood events in Carnarvon and bushfires in the peri-urban areas of Armidale and Kelmscott. A significant 58 463 residential and commercial claims were made across eight of the largest insurers in the period up to 24 November 2011 as a result of the flood events alone (QFCoI Final Report, 289).[2]

National Strategy for Disaster Resilience (NSDR)

It is widely acknowledged that continuous development in the urban periphery and on the coast is placing many homes in locations of increasing exposure to natural disasters (Smith, 2011). This was most recently demonstrated in the Victorian bushfire events of 9 February 2009 where many homes had existed in areas of 'unacceptably high' bushfire risk (VBRC, 2010). It is estimated that by 2050 70% of the world's population will live in coastal zones placing more and more homes at risk of extreme weather events (Global Platform for Disaster Risk Reduction, 2011). Worldwide, the cost of disasters has been increasing dramatically in recent decades stretching both private and public sectors in their capacities to respond (Kunreuther, 2009). On 13 February 2011, the Council of Australian Governments (COAG) released the '*National Strategy for Disaster Resilience'* (NSDR).[3] Developed by the Ministerial Council for Police and Emergency Management (MCPEM), the NSDR is based on the growing understanding that the cost of financing disaster recovery is increasing at a rate beyond which governments can guarantee fast and effective recovery efforts (Arnold, 2008). The NSDR is to be followed in 2012 with an Implementation Plan for moving Australia towards becoming a more resilient nation when faced with natural disasters.

'Shared responsibility' is integral in the move towards resilience. It is discussed in the NSDR and is based on the understanding that communities must take a more active role in mitigating the disaster risks they face. Whilst further exploration of shared responsibility is warranted, the principle seeks to move governments at all levels towards encouraging pre-disaster mitigation at the individual and community level. In doing so it aims to reduce the vulnerabilities and post-disaster fiscal burdens otherwise and increasingly absorbed by governments.

In the context of emergency management, resilience describes the strength and ability of entity, whether it be an organisation, community or individual, to bounce back from a challenging event or adverse situation. Rogers describes it as "a framework which includes every action undertaken to ensure a swift return to equilibrium that is more stable than that existing prior to perturbation" (Rogers, 2011, p. 54). Resilience involves 'adaptability,' the capacity to maintain stability in the face of a natural or anthropogenic disaster (Folke .et al 2005). A prepared community will

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[2] Allianz, CGU, RACQ, Suncorp, Comminsure, QBE, AAMI, NRMA.
[3] http://www.coag.gov.au/coag_meeting_outcomes/2011-02-13/docs/national_strategy_disaster_resilience.pdf

be able to bounce back from a disaster event more quickly which in turn facilitates faster psychosocial recovery.

Public/private partnership

When considering resilience, actions taken to reduce the consequences of a natural disaster, known as mitigation, allow speedy recovery. The public and private sector both play important, mutually beneficial roles in flood risk management. The public sector plays a particularly important role in regulating land use planning. The Queensland Flood Commission of Inquiry ('the Commission') have made a range of recommendations to strengthen land use planning (QFCoI, 2012). Numerous submissions to the NDIR and the Commission noted issues with land use planning that must be rectified in order for insurance to be able to play its role in risk mitigation (Queensland Board for Urban Places, 2011). It is impossible to expect insurers to offer flood cover in areas where inappropriate development has occurred. Before resorting to forcing insurers to offer flood cover, Governments must focus on strengthening land use planning on a catchment by catchment basis.

To enhance resilience both public and private sectors must play a part in improving risk awareness. Improving the quality and consistency of flood mapping will benefit both insurers and governments at all levels. With appropriate flood mapping, the private insurance market can accurately price risk and set premiums to signal the level of hazard associated with habitation in certain areas (Crichton, 2008). Greater certainty may reduce premiums or raise them in areas where repetitive losses are likely to occur, promoting the gradual reduction in exposure to flood events.

The NDIR recommended insurers be forced to offer flood cover to enhance the uptake of flood insurance across Australia. Yet a wide range of stakeholders identified a better first step would be to improve flood mapping. The Attorney-Generals' Department is currently working to identify the problems associated with flood mapping in Australia. The Insurance Council of Australia (ICA) notes flood insurance coverage is already on track to increase across Australia to 84% by 2012 (ICA NDIR Submission 2011, p 8). In line with this projection numerous insurers including CGU and AAMI, have announced they will voluntarily expand their coverage to include flood insurance. Unlike the situation in Canada where residential flood cover is practically non-existent, there evidence does not suggest a market failure to provide flood cover to Australian homes provided they are not in areas of high risk.

Forcing insurers to increase their exposures to flood is not necessary. Nor is it advisable to provide insurance to what would be likely to be repetitive loss homes, just for the sake of increasing 'availability of insurance.' The Government needs to keep in mind its commitment through the NDRS to enhancing resilience. Where there is a clear pathway to improve flood mapping, it cannot be said that mandatory cover is being recommended as a 'last resort.' Better mapping will ensure premiums

to continue to reflect risk and provide appropriate signals to those considering mitigation.

Government regulatory role

Governments benefit from the role insurance plays in facilitating community recovery and so must ensure the market can operate effectively through both prudential and market regulation. To understand the important role government plays in ensuring a fair and efficient market for insurance, it is necessary to outline the regulatory framework within which the Australia insurance industry operates. The Australian Prudential Regulatory Authority (APRA) and the Australian Securities and Investment Commission (ASIC) are the two regulators of the insurance market.

APRA monitors insurers to check they have retained sufficient capital to meet their obligations to policy holders. Insurers are responsible for assessing the risk of an event occurring, and use this information to determine their capital requirements and underwrite policies appropriate to the amount of exposure they can carry without affecting the survival of their company. This is known as the 'exposure to loss' ratio. ASIC works within the insurance industry to monitor compliance with relevant legislation including the *Insurance Contracts Act 1984 (Cth)* and *Corporations Act 2001 (Cth)* and *Australian Securities and Investments Commission Act 2001 (Cth)* (*'ASIC Act'*). ASIC investigates and acts on systemic issues as they arise.

Within the insurance industry significant players provide disaster insurance under a range of brands. Insurers, brokerage firms and their agents must abide by the *Insurance Contracts Act 1984 (Cth).* All members of the Insurance Council of Australia must abide by the General Insurance Code of Conduct and must hold an Australian financial service licences (AFSL) in order to sell insurance. Under the *ASIC Act 2001 (Cth)* Regulation 139 insurers must be members of certified external dispute resolution services. The Financial Ombudsman Service (FOS) is the major provider of these services. It is set up as an independent entity to assist in the resolution of insurance disputes and to report any systemic issues to ASIC. Neither ASIC nor the FOS have noted any systemic issues arising from the 2010/11 events although there may be some issues regarding lack of visibility of these entities in certain communities (HOR, 2012). It is also worth noting that the FOS is constrained by the low value of claims (up to $250,000) it is empowered to adjudicate which may impede community willingness to use it as a dispute resolution channel.

Reports and Inquiries following the Floods

On 4 March 2011, the Commonwealth Government established the Natural Disasters Insurance Review (NDIR). The intention of Government was to assess the issues related to current availability and affordability of disaster insurance in Australia with a view to determining whether changes were necessary. On 30 September 2011, the NDIR submitted its final recommendations to the Federal Government. The key recommendations included the mandatory inclusion of flood

insurance in homes building insurance policies to be subsidised by Government on the basis of on ‘affordability threshold’. The NDIR also recommended the Federal Government offer subsidised reinsurance, set up a reinsurance and premium discounting facility, and guarantee any shortfall as it arises (NDIR, 2012). It is not automatically clear from their recommendations that the NDIR have had appropriate regard to risk mitigation before resorting to risk transfer.

Having regard to the evidence provided to the NDIR it is disappointing that the Panel did not follow their own Terms of Reference (ToR). The TOR required the Panel to be guided by the principle that government intervention is only required where there has been *clear market failure*, and that mitigation should be a ‘primary objective.’[4] Upon examination of the evidence presented to it, it can only be concluded that this did not occur. It appears only a selection of evidence provided in submissions informed the interventionist position taken the final report. The NDIR final recommendations were based on a market failure that did not actually occur and instead demonstrated a determination by the Panel to affect structural changes beyond those that were justified by the evidence supplied to it.

On August 11, 2011 in response to the Treasury’s consultation paper, *‘Reforming Flood Insurance: Clearing the Waters,’* the Government announced steps to: remove the exclusion of the General Insurance Code of Practice (‘the Code’) following natural disasters, to implement standard definition of flood, and enhance product disclosure by insurers through a mandatory ‘Key Facts Statement’. A four month time limit has been suggested for a decision on an insurance claim following a disaster event. In response to both the Clearing the Waters and NDIR recommendations, in November 2011 the Federal Government released a further discussion paper seeking comments to be made on proposed changes by 31 March 2012.

On 28 February, 2012 the release of the report by the House of Representatives Standing Committee on Social Policy and Legal Affairs ‘*Inquiry into the Operation of Insurance Industry during Disaster Events’* also identified problems associated with claims handling as a significant cause of consumer discontent following the 2010/11 Flood events. A series of recommendations have been made and steps underway to remove the exclusion of the Code of Conduct following natural disasters. Further, a lack of adequate communication has been identified and accepted by the insurance industry as requiring improvement.

When the Queensland Floods Commission of Inquiry (‘the Commission’) released its final report on 16 March 2012, it acknowledged it did not receive sufficient evidence from claimants to make broad conclusions on the performance of the industry. However it acquired statistics from insurers and was able to reflect the reality relating to timeframes for claims processing. Testimony provided to the Commission

[4] http://www.ndir.gov.au/content/Content.aspx?doc=tor.htm

demonstrated instances of poor communication with policyholders (QFCoI, 2011, p. 4559). Despite these issues, the Commission noted that evidence provided by insurers was contradicted media representations of significant delays (QFCoI, 2012 at 296). The majority of claims were efficiently dealt with within 2-3 months. The Commission acknowledged current steps to remove the exclusion of the Code of Conduct following disasters will enhance communication and other claims handling issues.

Convincing the public that it is unnecessary to intervene in the market will be difficult with the media portraying a situation of market failure. It cannot be said that the media has provided balance to the debate surrounding the performance of the insurance industry following the 2010/11 events (Roberts, 2011). Yet neither ASIC nor the FOS have been inundated with complaints raising systemic issues.[5] The key message of the FOS is not of broad market failure requiring government intervention, but that early and ongoing communication by insurers with their policyholders would significantly reduce the level of complaints (FOS, 2011).

Definition of flood

Variations in the definition of flood between insurers encouraged public perceptions of market failure following the 2010/11 events. Whilst it is comparatively easy to identify where a bushfire has destroyed a home, it is more difficult to identify whether damage has been caused by flood or storm waters. Decisions are often time consuming, may require expert advice and may take many months to be challenged in internal and external dispute resolution processes. The Federal Government proposed standard definition when implemented, should eliminate variation in claims decisions where policyholders have flood cover with different insurers. As noted by the FOS, there will continue to be disagreements between whether an event itself is a flood or a storm (HoR, 2011). A measure of media understanding is necessary to identify that this is not a reflection of a broader systemic issue or market failure requiring a Government role in providing subsidised insurance, but a result of the similar nature of flood and storm events.

The evidence provided to the many reviews and inquiries established over the past year have not proven a market failure occurred. They have demonstrated issues with claims handling and the definition of flood. Work is underway to resolve these issues and policymakers must give the changes time to have an effect before considering last resort market intervention.

Rationale for avoiding intervention

The proposal that the Federal Government should finance reinsurance and offer wide premium subsidies would involve it taking on an unacceptable level of moral

[5] According to information received by the FOS on 25 January 2012, until November 2011 there had been a total of 900 natural disasters related disputes.

hazard. Moral hazard occurs where one party insulates another to some extent for the negative consequences associated with a particular risk. In this case the consequences of living in high risk areas are insurance premiums or disaster losses. By reducing the negative consequences of habitation in these areas, the Federal Government would be diminishing incentives on mitigation action.

Although the Federal Government could provide the financial backing to enable speedy recovery, this would do nothing to prevent a growing dependency on post-disaster assistance. This position, which the head of the NDIR, John Trowbridge, is advocating widely in the media, is not in the long-term interests of Australia (Thompson and Solomons, 2012). It is also in contrast to international moves towards more equitable catastrophe risk sharing by governments and communities.

The NDIR founded their position that all insurers should offer flood cover, on the basis of what they termed as a "consumer's disaster insurance paradox." That is, that if other perils are currently covered, floods should also be covered (NDIR, 2011, p 2). Insurers must set their premiums on the basis of annual average loss expectancy (AAL) for <u>each</u> exposure therefore this argument is not persuasive. Instead it demonstrates a simplistic view of how insurance works. As Clark notes, 'the insurance industry needs to be able to achieve a reasonable management of the environmental risks that it covers by controlling the number and size of flood claims to which it is subject' (Clark, 1998 p. 336). There are strong reasons why floods are not treated as other risks. Globally between 1970-1994 storms and floods were responsible for over 90% of total economic costs of extreme events (Kunreuther et al, 2009). By 2001, flood amounted to approximately 29% of all natural hazard damage making it the most costly Australian hazard (Bureau of Transport Economics, 2001).

Kunreuther and Pauly have argued that bundling exposures into insurance contracts may raise the perceived probability of loss threshold sufficiently to encourage greater uptake of insurance. They argued for this solution by demonstrating that unbundled premiums for certain events are often perceived to be at 'rip-off' levels and are avoided by consumers (Kunreuther and Pauly, 2004, p. 18). However, the negative implications of mandatory bundling of flood cover would outweigh any potential increase in consumer incentive to insure. Forcing insurers to offer flood cover may have negative long-term implications for policyholders. Where insurers have not already exited the market an event may lead to insolvency due to overexposure. Additionally the costs of obtaining sufficient capital where insurers may be overexposed are likely to be passed on to consumers. Where the Government provides discounted and guaranteed reinsurance, it will be taxpayers who suffer the financial risk of these increasing exposures.

According to Kunreuther, the effect of mandatory offering of flood cover is likely to be a reduction in the overall supply of insurance (Kunreuther et al. 2009). This would be likely to reduce competition in the market (Kunreuther et. al, 2009). Where the supply

of insurance is low, it is more difficult to classify a community as resilient as there will be less liquidity available for accelerated recovery (Smith, 2011). It might not be a problem for larger insurers to be forced to offer flood cover, but for the smaller entities, the risk of remaining in the market may be too high. When the Florida legislature intervened to force insurers to continue to offer Hurricane insurance following Hurricane Andrew in 1992, the result was a mass exodus from the market (McTigue, 2007). Even for larger insurers the likely concentration of policies in hazard prone geographical areas combined with the known difficulty of calculating probability of loss for flood risk would lead to increased prudential concerns.

Government subsidies

Subsidies should be avoided as they prevent price signals from operating effectively ad for habitation in high risk zones (Midelmann, 2008). The NDIR proposed a system of flood subsidies based on an 'affordability threshold' that would be phased out over time. However, Australia is likely to struggle similarly to how the United States has when it comes time to encourage politicians to remove them. The eventual reduction of subsidies will inevitably be highly unpopular and well publicised. The NDIR has been unable to put forward any firm timeline of when these subsidies would be phased out apart from stating that they would be reviewed from 'time to time.' Although the Australian Institutes of Actuaries (AIA) conceded a set of premium subsidies may be necessary as a temporary measure, international experience provides some insight as to the difficulties associated with their removal.

Research has already shown that homeowners largely fail to mitigate losses due to a general inability to justify the upfront costs relative to the perceived benefits (Kunreuther et al, 2009). Lowering the price of insurance further reduces the incentives for voluntary mitigation action as the perceived cost of inaction will be even lower. When it comes to premiums, there are sound reasons why they may be are unaffordable in some areas. The appropriate role of insurance in enhancing resilience comes down to a question of policy objectives. As there has not been a persuasive case for market failure, Policymakers aware of the need to enhance resilience, should avoid subsidies in favour of mitigation efforts.

International Experience

Although NDIR representatives have noted 'most' developed countries have some form of government insurance mechanism, international experience is actually more mixed. Rather than moving towards greater government adoption of catastrophe risk many countries have been working in recent years to reduce their involvement and growing exposures in favour of moves towards mitigation and self reliance (Klein, 2009). States such as Germany, Austria, the United Kingdom and Italy, have significant flood risk, but retain a private market model.

When the Association of British Insurers (ABI) entered into a "Statement of Principles" agreement with the British Government, it was to provide standard flood

cover in exchange for effective public floodplain management (Niels, 2011). The United Kingdom faces a policy crossroad where in 2013 this Agreement expires. Since 2000 the Agreement has ensured flood insurance has been widely affordable and available for houses that do not face significant (1 in 75 year) flood risk. However, it is highly unlikely to be renewed. Recently the ABI announced the Agreement massively distorted the system of flood insurance resulting in problems such as overexposure by certain insurers and inequitable levels of cross subsidisation (ABI, 2012). Noting that the Government had not taken adequate action to address flood risk or maintain flood protection infrastructure, the ABI have declared they will not renew the agreement when it expires.

Although the Canadian Government provides post disaster relief similarly to the Australian Natural Disaster Relief and Recovery Arrangements (NDRRA), there is no provision of insurance for overland flooding for households (Sandink et al, 2010), . Canada has in recent years experienced increases in the cost of natural disasters and is moving to reduce post-disaster reliance on government financing (Hwacha, 2005). Swiss Re has called for a public-private partnership approach where the Government improves public flood risk awareness and mitigation efforts whilst the private sector insures against all but the highest risk homes. Swiss Re has acknowledged however, there will be some cross subsidisation. The success of the scheme would be dependent on the Government acting to fulfil its role in raising awareness in a way the British Government was unable or unwilling to (Sandink et al. 2010).

The United States experience is particularly relevant for Australia as it demonstrates the challenges associated with national subsidies and forcing insurers to offer flood cover. Long running issues surrounding the United States National Flood Insurance Programme (NFIP) should provide caution to those advocating for greater government intervention in the insurance industry. The United States had the greatest worldwide proportion of disaster losses over the 1970-2004 period and faces significant annual flood risk (Kunreuther, 2009). In 1968 the United States legislated to provide for the NFIP as it perceived a market failure in the provision of affordable flood cover. Although a key aim of the NFIP is to reduce the overall cost on the taxpayer and encourage mitigation action, the program has had to borrow heavily from the Federal treasury. There is some evidence that it has reduced annual rebuilding costs by $1 billion per year through building code reforms etc, however the level of successful mitigation is contested and uptake of flood insurance remains extremely low (McTigue, 2007). Since its inception the United States Congress has struggled to lift premiums to a level that would encourage voluntary mitigation action or discourage inappropriate habitation of high risk areas (Smith, 2011).

Following Hurricane Katrina in 2005, the United States Government Accountability Office (GAO) published a report acknowledging the extensive problems with the NFIP (GAO-06-174T, 2005). The Fund is not self-sufficient, is not actuarially sound and pays significant amounts out to repetitive loss homes. The United States

Congress passed the *Bunning-Bereuter Blumenauer Flood Insurance Reform Act* (2004) in an attempt to build greater resilience into the NFIP.[6] It mandated that severe repetitive loss homes should be elevated, relocated or demolished or face higher premiums. These homes account for 1% of all insured homes under the program yet amount to 25-30% of total costs (GAO-06-174T, 2005). Incredibly some of the original homes that received initial subsidies following the implementation of the NFIP in 1968 were still in 2005, draining federal resources as repetitive loss properties (GAO-06-174T, 2005). Over the past 40 years it is clear that United States policymakers have learned that key to successful flood risk management is a strong primary commitment to mitigation.

At a state level the anti-competitive Government intervention in the Florida market for Hurricane insurance demonstrates the negative effects of over-regulation. Following Hurricane Andrew the Florida State Government enacted a law to prevent insurers from exiting the market (McTigue, 2007). A pro-intervention culture developed which has allowed the issue of insurance to become crucial to political candidates during recent elections. In recent years Florida regulators have increasingly intervened in the market to deny requests by insurers for premium increases. They have also sought to prevent insurers from isolating their Florida business from the national market (Kunreuther, 2006). This is clearly a pathway Australian policymakers should avoid.

The differences in international approaches may be explained as a matter of policy objective or dominant national philosophy. Klein has noted the link between philosophies underpinning regulatory systems and their treatment of risk financing (Klein, 2009). In countries such as the United States, governments play a large role in providing flood insurance. It appears that the dominant philosophy prioritises short-term solutions to flood in widely available and affordable protection for homes and businesses above the implementation of less popular mitigation strategies towards the creation of resilient communities. As Kunreuther notes, “This combination of underinvestment in protection prior to the event and liberal use of taxpayer’s funds after a disaster does not augur well for the future” (Kunreuther, 2009). There may be scope for greater regulation of the insurance market in Australia however if the nation is committed to advancing flood resilience, reforms must not diminish incentives on mitigation action. Instead policy makers must push towards greater shared responsibility for risk mitigation and better land use planning by local governments, businesses and individuals.

International experience with increased government risk transfer for catastrophe financing begs the question as to why the NDIR has failed to adequately emphasise the importance of mitigation. While the United States tries to turn back the clock on its highly distorted system of public flood insurance and the United Kingdom faces the dissolution of its public-private partnership with its domestic insurance industry,

[6] PL 108-264.

Australia has the opportunity to avoid such mistakes. Even one of the largest global reinsurers, Lloyd's of London, has cautioned Australian policymakers to keep market intervention to a minimum (Hartge-Hazelman, 2011).

Instead the Federal Government must identify those properties in the most high risk areas and target local, state and federal resources into reducing exposure through elevation or relocation programs. Risk Frontiers has recently estimated that there are approximately 59,439 residential properties in high risk areas throughout Queensland (Risk Frontiers, 2011).[7] With the NSDR firmly focusing public policy in the direction of reducing exposures, it is critical that governments demonstrate a genuine commitment to actions that will reduce the risk of loss associated with these homes. The benefit of mitigation actions is well demonstrated by a 2009 UK study which found building back better/more resilient (resilient reinstatement) flood affected homes in Cockermouth region cost an average of 34% more. Yet it also found that upfront investment would be recouped following a single flood event (Rotimi, 2009)

Alternative risk transfer mechanisms

When in 2004, some authors for the OECD advocated for national catastrophe programs, it was claimed that Governments have deep credit capacities and are the most logical entity to bear the risk of disaster losses. Since that time a Global Financial Crisis (GFC) has reduced the availability and increased the cost of capital. Further, the credit rating of many sovereign nations has been downgraded and in this economic climate it cannot be so easily assumed that Governments should be the logical entity to bear the financial risk of natural catastrophes. Particularly in relation to the recommendation by the NDIR for the Federal Government to act as a reinsurance facility there are many reasons why it is not appropriate for it to take on endless financial risk. Blanchard noted in 1917;

> "Each reinsurer limits the risk which it will assume in order that its own stability may not be threatened, and requires the original insurer to retain a certain part of the risk to promote careful selection. The amount ceded to any other single company depends on the judgment of the reinsurer and the reinsured as to the risk which can be carried safely" (Blanchard, 1917).

The Federal Government is not a bank and it is not prudent to consider resolving the challenge of catastrophe risk financing through risk transfer to it via reinsurance. Just as a private reinsurer must limit its risk, so should the Federal Government, so as not to threaten its own stability.

In this context the role of catastrophe bonds should be explored as a means of assisting the private insurance market without distorting it, and without threatening fiscal stability. The rising cost of capital caused by recent natural disasters may open the door for a catastrophe bond market to flourish in Australia. Catastrophe bonds

[7] High risk is defined as those with ARI (average recurrence interval) under 100 years.

were created after Hurricane Andrew where 11 insurers found themselves overexposed and insolvent (Lewis, 2007). Catastrophe bonds "transfer the risk of natural disasters to investors, who receive a yield in return for agreeing to cover damages they consider unlikely." (Perry, 2011) 'Cat bonds' as they are known, allow reinsurers to diversify their risk in broader capital markets and have increased the capacity of insurers to operate in highly disaster prone areas such as the United States Gulf Coast (Ward, 2011).

Following the 2010/11 events reinsurance prices have increased significantly. These prices may return to reasonable levels however if they do not, they may create the necessary demand for a cat bond market. Cat bond expert John Seo has noted reinsurance in Australia and New Zealand has until recently been available at 'bargain' rates (Ward, 2011). Although prices for reinsurance have increased, whether this indicates a lack of capacity sufficient to trigger the development of a cat bond market in Australia is yet to be seen. The extent to which risk-linked securities can alleviate problems of capital requirements on insurers following catastrophic events is subject to finding willing investors and, being able to price the probability of default. The Australian Institute of Actuaries (AIA) has noted that the Federal Government should consider investing in catastrophe bonds (AIA, 2011). Global reinsurers have called for Australia to turn to catastrophe bonds instead of one off flood levies (Perry, 2011). The potential benefits to be gained from the development of a cat bond market suggest further investigation by public and private sectors of alternative risk transfer mechanisms is warranted.

The impact of charitable relief on resilience

Any discussion of public and private roles in catastrophe financing must include the role charitable funds play in the promotion of resilience. Whilst in the short term these funds have enabled a form of resilience in assisting rapid community recovery, they do not encourage the uptake of insurance or individual responsibility in the long term (McTigue, 2007). Following the 2010/11 floods approximately $276 million was raised to assist those most in need including $22 million from State and Federal Governments[8]. A sliding scale of need was created by Price Waterhouse Coopers which identified that those without insurance were most in need. As a result of the method of determining need there were occasions where those who had not paid any flood insurance were provided, without any excess payable, with greater assistance than those who were insured, yet who may not have had an adequate 'sum insured'.

The Federal Government also provided a range of personal hardship grants, and other forms of assistance to flood affected individuals. Although Governments must play a role in protecting the most vulnerable in society, this must be done in a way that does not embed dependence by rewarding the failure to take up flood insurance

[8] In addition to the $7 billion cost of infrastructure recovery to be provided by State and Federal Governments through the Natural Disasters Relief and Recovery Arrangements (NDRRA)

or undertake mitigation actions. Where homeowners know that regardless of whether they take out insurance they will be compensated, charity assistance presents a danger of creating a culture of dependence as opposed to resilience.

Creating a risk aware society

Both insurers and Governments have a role to play in creating a resilient risk aware society. Homeowners are known to have difficulty in opting for even the most affordable cover for low-probability high-risk events. Kunreuther hypothesised that this was due to the transaction costs associated with finding out the true probability of an event occurring (Kunreuther, 2004). Evidence provided to the Commission demonstrated even where some homeowners had sought Floodwise reports before purchasing their homes, their ability to appreciate the real level of hazard was not guaranteed (QFCoI, 22 September, 2011). The Key Facts Statement and establishment of a flood risk information portal are likely to reduce the amount of claims based on inadequate disclosure and improve the uptake of flood insurance. However to enhance resilience information on flood risk must be clear and in plain English.

The capacity of insurers to provide relief following disasters is dependent on consumers accurately understanding the risks they face. The reality is the perceived risk of a hazard capable of encouraging mitigation action is not well correlated to actual risk (Clark, 1998). Evidence also demonstrates homeowners commonly opt for the cheapest premium without properly considering the exclusions (Kunreuther, 2006) and without seeking information on the risks associated with living in a particular area (Huber and Wider 1997). Encouraging preparedness depends upon lowering the transaction costs associated with acquisition of information and ensuring that information is unambiguous. To enhance resilience governments at all levels must invest in communicating to individuals that they have a shared responsibility to be informed of relevant hazards in their areas and take out appropriate insurance.

The role of local government in enhancing resilience

As discussed above issues with land use planning must be addressed before resort it made to forcing insurers to offer flood cover, or the Federal Government to provide a set of premium subsidies. It is inequitable for local governments to be able to approve developments without proper consideration of flood risk, and then to blame insurers when a disaster event occurs. Local councils have a significant role to play in ensuring the buildings have been built in appropriate locations to minimise flood losses. Submissions to the NDIR in addition to submissions and testimony provided to the Commission outlined examples of the failure of certain councils to adequately plan land use or, properly consider the impacts of development on flood risk levels for those in downstream areas (QFCoI, p 4567). The Queensland Board for Urban Places called for more 'place appropriate' building in order to enhance preparedness

and resilience (QBUP, 2011 p. 1). It is not appropriate for the Federal Government to subsidise risks created by local councils through inappropriate development of the floodplain.

Internationally New Orleans is an example of a city that has worked hard to create green corridors where human habitation in high risk areas is prevented thereby reducing its exposure to loss of life. In 1990 Sweden tied liability for flood losses was to the local Councils who had approved development applications. As a result in the flood events of 2000 no damage occurred to buildings erected with permits allocated post the 1990 amendments. Similarly in Scotland, councils work together on a catchment basis and may be held responsible for poor land use planning decisions.

In order for there to be greater equity in the sharing of risk and appropriate incentives on mitigation, legislative amendments need to put a greater legal obligation on local councils to better assess the potential current and future flood risk associated with development. Where there has been a clear failure to consider aspects of flood plain risk management such as zoning, minimum floor levels, levees and other infrastructure, there should be an avenue for the local council or developer, to be liable as in Sweden. This would ensure a greater responsibility is undertaken by those creating the risk by tying the negative consequences of disaster recovery financing to the action creating the vulnerability.

Conclusion

As individual disaster events such as Hurricane Katrina have exceeded $100 billion in costs, the challenge of deciding who should bear the risk of catastrophe financing is not faced by Australia alone. Insurance is one of many risk management strategies that allow communities to rebuild following a disaster event and premiums can deter inappropriate habitation. However it should never be seen as a panacea to the risk of natural disasters. If Australia is committed to enhancing resilience as a priority through the NSDR, the Federal Government should not take on the risk of financing catastrophe risk as advocated by the NDIR. Certainly both the United Kingdom and United States experiences intervening in the market have not led to the development of resilient communities.

The Australian policy agenda now appears set to split in two opposing directions, one leading towards and the other against enhanced resilience to extreme weather events. An examination of some of the recommendations made by the recent NDIR demonstrates the crossroads at which Australia currently stands. Proposing the compulsory offering of flood cover by insurers, the implementation of a system of premium subsidies and calls on Government to act as a reinsurer will discourage competition within the insurance market and prevent premiums from accurately reflecting risk.

The appropriate role of the Federal Government in insurance is not to provide subsidies to most medium and high risk homes or to force insurers to offer flood

cover. To enhance resilience the Federal Government must work with insurers to provide better mapping, enhance the regulatory framework within which insurance is provided, and to commit appropriate funding towards mitigation. Strengthened land use planning and a re-evaluation of how charity assistance is provided will also enhance resilience by ensuring that those creating flood risk or failing to reduce flood risk are not rewarded.

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