Market imperfections and catastrophe insurance


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The MENA region is distinguished by a long historical and archaeological record of natural catastrophes. However, it is sparsely covered by catastrophe insurance and suffers from a number of imperfections which hinder advancement. With the judicious intervention of governments, assistance from international donors and improved risk awareness, some of these are likely to be rectified progressively over time, write **Dr Gordon Woo**, Lead Catastrophist and **Mr Daniel Stander**, Senior Director, London Market, both of RMS.


Mr Daniel Stander

A competitive insurance market is one with numerous buyers and sellers, all of whom are well-informed. For an insurance market to properly operate, there has to be a reliable flow of information between the insurer and the policyholder. Without this, pricing distortions may occur and can eventually lead to market failure.

One major problem is adverse selection, when policies are incorrectly priced due to inadequate information being made available to an insurer by the buyer. High-risk properties are then more likely to be insured or have greater coverage than if policies were correctly priced. A consequence of under-pricing could be excess claims over premiums, leading to unforeseen insurance losses and a contraction of the market.

In addition, insurers are exposed to moral hazard, where insured properties are poorly maintained by policyholders, or where risk mitigation measures are neglected or ineffectively implemented. Furthermore, in the event of a loss, claims may be exaggerated either intentionally or through errors of over-reporting. To minimise moral hazard, insurers need to enforce tight loss control and maintain sufficient resources to monitor errant policyholder behaviour.

In order to examine the progress of the MENA insurance market, it is useful to review how the market in the US has developed over time. Information on the precise location and construction of a property in the US was sparse several decades ago. However, such exposure data have become progressively more reliable over time. The increased profile of modelling technology and the financial impact of catastrophes, such as Hurricane Katrina, have highlighted the need for advanced portfolio management methodologies coupled with a back-to-basics approach to accumulation controls. Post-Katrina, re/insurers are marrying insights from sophisticated CAT models with more intuitive exposure management techniques, applying deterministic probable maximum losses (PMLs) to monitor geographic zones.

However, information asymmetry remains significant for middle and low-income countries. Exposure data tends to be much lower in both quantity and quality. The consequent higher uncertainty over losses forces insurers to set aside more capital for risks in these countries, resulting in higher premiums. Pricing could decline with more reliable exposure data.

Another key knowledge gap relates to catastrophe risk modelling, which is under-resourced in middle- and low-income countries. There is a saying in the modelling business that "models make markets". However, even if modelling is a necessary condition for a fully functioning market, it is far from a sufficient condition. The inefficiency of catastrophe insurance markets is due to a number of factors, some of which are easier and quicker to remedy than others.

Market inefficiencies

As in all businesses, technically skilled professional manpower is an essential asset to drive competitive market growth. Insufficient numbers of actuarial staff and other insurance and regulatory professionals impede development of the MENA insurance markets. But staffing levels are symptomatic of the generally small take-up rate of insurance in the region. The reasons for the perceived low-attractiveness of insurance are common causes of market imperfection across the region.

Lack of information about the insured hazards

Public education campaigns are required to increase hazard awareness and promote seismic safety in those countries exposed to a significant level of earthquake hazard. The regional attitude towards risk tends to be somewhat fatalistic and insurance protection and risk management struggle for economic priority.

Mistrust of insurance companies

Policyholders may have little confidence that claims will be paid, either because of company insolvency or because of other types of mis-management. There is an additional regional religious dimension arising from the high moral code of Islam; some Muslims believe insurance to be unnecessary, as a truly Islamic society should help its victims.

Comparative unaffordability of insurance

Even in the more prosperous countries of the region, the cost of insurance may be beyond the narrow means of most citizens; high unemployment has been a problem in MENA for years. According to the World Bank, the ongoing economic crisis has dimmed prospects for improvements in the near term. Figure 1 is a guide to the general national affordability of insurance in regional economies.

Regional variations

Some MENA country comparisons illustrate the various catastrophe insurance market imperfections that exist.

Figure 1: World Bank's list of economies in Middle East & North Africa

High Income	Upper-Middle Income	Lower-Middle Income	Low Income
Bahrain	Algeria	Djibouti	Yemen
Kuwait	Lebanon	Egypt	
Oman	Libya	Iran	
Qatar		Iraq	
Saudi Arabia		Jordan	
UAE		Morocco	
		Syria	
		Tunisia	
		West Bank / Gaza	

Saudi Arabia

The economic strength of Saudi Arabia within MENA supports the continued development of retail and commercial insurance markets. The operation of the car insurance market was tested by the Jeddah flash flood of 25 November 2009, when many vehicles were washed away. Insurance companies processed claims for policies that covered natural disasters. However, motorists lacking cover against natural disasters could still receive a determined amount assessed and paid out by the Ministry of Finance. Sizeable commercial properties, such as warehouses and factories, had natural disaster coverage, while few homes and small shops were insured.

Lebanon

Lebanon is an upper-middle income country with an insurance penetration rate of about 20%, which is a base for a solid market with considerable growth potential, especially if Lebanon can regain its former status as a regional insurance centre. The development of the market for extraordinary risks would be of significant societal benefit because of the high seismic hazard in the country, due in part to the northern fault extension of the Dead Sea Rift, also compounded by the tsunami risk along the Mediterranean coast. The earthquake insurance market expanded after some seismic activity several years ago, but further public education is still needed to increase awareness and appreciation of the value of insurance. A repeat of the 1759 (M7.4) earthquake, which killed tens of thousands, should be cause for concern. But the Lebanese are inured historically to catastrophic levels of political violence, bringing destruction on a par with a major earthquake.

Algeria

On 21 May 2003, Algeria's worst earthquake in two decades struck killing more than 1,000 people, injuring thousands and leaving thousands more homeless. Thereafter, in 2004, the Algerian Parliament passed legislation that all property owners must insure against natural catastrophes. The legislation covers household, commercial and industrial risks, yet only a modest proportion of households have taken out cover. A large majority of the risk is absorbed by the state reinsurer via the Algerian Catastrophe Insurance Programme (ACIP) and is transferred into the international reinsurance market. ACIP requires accurate risk modelling to calculate the potential losses from earthquake events and an earthquake model was built to assist in assessing the risk level. The state-of-the-art in Algerian seismology is high, reflecting three decades of local earthquake knowledge gained since the devastating El Asnam earthquake of 1980.

Yemen

Like Saudi Arabia, Yemen is exposed to a moderate degree of volcano as well as earthquake hazard. There is no known major eruption in Yemen, so the explosion risk is very low beyond the immediate region of any volcano. Consequently, the economic risk is predominantly from lava flow, which essentially renders unoccupiable everything in its path, which extends a few kilometres. The World Bank has taken an interest in the economic loss potential from the geological hazards of Yemen, but in a country where few use financial services, the commercial market for catastrophe insurance is quite limited.

Reducing market imperfections

Catastrophe insurance market imperfections are reduced gradually at different speeds in different countries. Whereas development in the lower income countries may be slow, swift progress can be anticipated in the higher income countries.

In summary, if the following five criteria are fulfilled, a more efficient catastrophe insurance market in MENA will follow.

- Practical lessons to be learned from the occurrence of actual hazard events;
- Risk awareness of probable events to be increased with the adoption of CAT modelling science;
- Moral hazard to be reduced as insurers incentivise risk mitigation behaviours;
- Insurers continue to continue develop products acceptable in Islamic society;
- Rising living standards to both accelerate insurance penetration and attract skilled professional manpower.

Flash flood in Jeddah, Saudi Arabia