



Risk, Reputation and Accountability

A GOVERNANCE PERSPECTIVE
OF DISRUPTIVE EVENTS

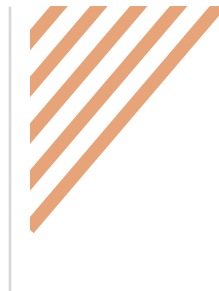
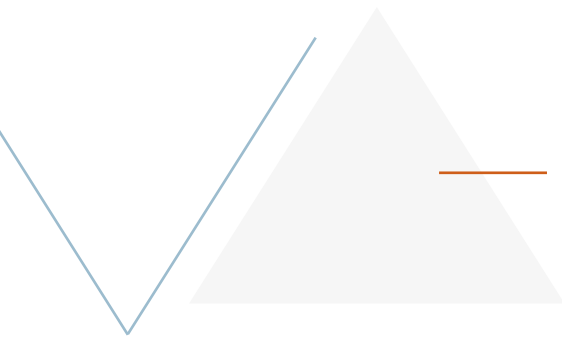


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1 The Escalation of Reputation Risk

This is a study of disruptive events. Decisions we make around these sudden, disorderly and often dramatic events have a direct impact on our companies' fortunes.

Lying at the heart of this dynamic is the risk to corporate reputation, an asset built up usually over many years of wise decision-making and valued by investors. But the virtuous cycle between reputation and value is both fickle and fragile. Barely a week passes without headlines of some beleaguered chief executive battling their way through a reputation crisis, a cyber attack or a natural disaster. When the virtuous cycle is broken, it carries enduring consequences for the company's future (and usually for the chief executive too).

The impact of disruptive events on financial performance is changing. The research summarised in this report provides new evidence that:

1. The impact of reputation crises on shareholder value has increased.
2. The range of perils for which executives are held accountable has broadened.
3. The demands on corporate governance and leadership have intensified.

Share prices (transparent and changing daily) facilitate detailed analysis, and the research focuses on shareholder value as the core metric of performance. A shareholder value analysis offers an evidence-based, forward-looking assessment of companies' ability to manage threats to financial performance and offers the keys to successful recovery. The principles uncovered apply equally to firms of a different ownership structure, be they privately-held, family-owned, under mutual ownership or even state-owned.

The study examines the impact on shareholder value of reputation crises, cyber attacks and natural disasters in the context of the last 20 years. The evidence reveals increasingly demanding stakeholders, where executive management now is held accountable for damage from perils previously considered to be bad luck. The perception of adverse outcomes has changed from bad luck to bad management. The signals are apparent already that such a trend is here to stay, and will extend to emerging risks from climate change and technologies yet to be invented.

Thankfully, we can learn from the evidence to identify a clear path that will help companies thrive in adversity, and practical guidance and solutions exist to help build enterprise resilience. I hope that you will find this latest research of interest as you strengthen your organisation's resilience against disruptive events.

The perception of adverse outcomes has changed from bad luck to bad management.

I am very grateful to FM Global for access to their engineering data, subject to strict confidentiality, and for their support of this work. FM Global is a leading commercial property insurer whose engineers inspect over 100,000 locations annually, yielding a vast, unique and proprietary data set.

Dr Deborah Pretty
Founder
Pentland Analytics

2 What's the Damage and Can We Avoid It?

The bad news is that the damage from a disruptive event to long-term performance can be substantial. The good news is that we can avoid it by making the right decisions, pre- and post-loss, and by applying solutions that exist already.

And the best news of all is that if we manage these risks particularly well, we may surprise investors on the upside, and actually emerge with an enhanced reputation and higher valuation.

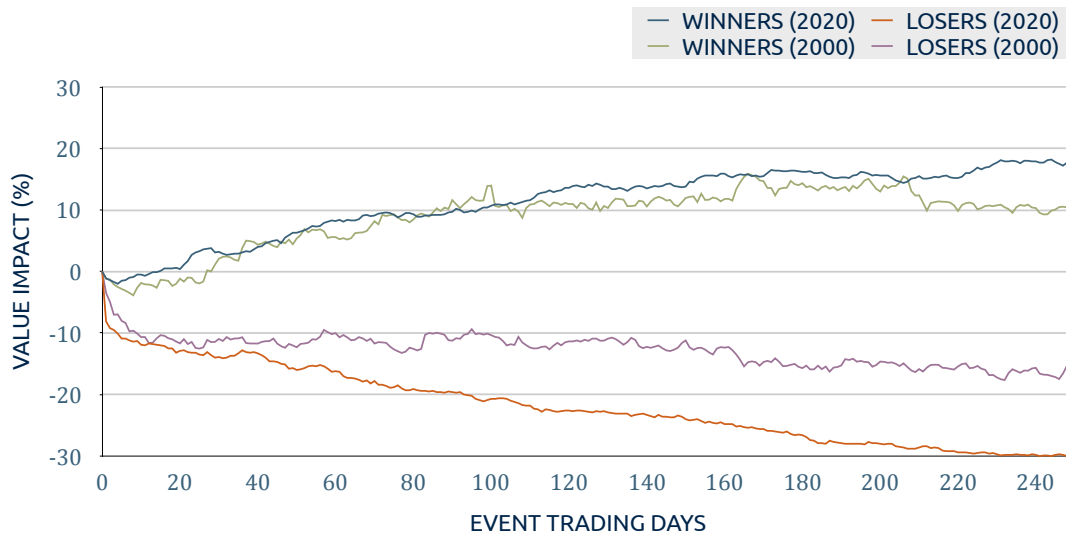
REPUTATION CRISES

The average impact on shareholder value from a reputation crisis is -5% across the post-event year. This is a modelled share price reaction: over and above the relevant market index, risk-adjusted for beta (the price sensitivity of the stock to the market), plus a few other adjustments such as for dividends and stock splits. Included in the portfolio of reputation crises are mass fatality events, major property losses, communications blunders, cyber attacks, product or service failures, accounting irregularities and tales of executive malfeasance. The result is a clean measurement of firm-specific impact, distinct from market-wide influences.

The average hit to share prices of 5% across a portfolio of reputation crises has remained consistent throughout the last 20 years of conducting this study. In 2000, there were 25 crises in the study database. Now, in 2020, there are over 150 events and the database is updated continually. The average picture, however, masks significant differences between firms in their ability to recover from crisis.

Shown in Figure 1, are two discrete groups, somewhat frankly called Winners and Losers, according to their ability to recover value following a reputation crisis. Aligned on Event Day zero, are the dates on which news of each crisis broke into the public domain; thereby diversifying across different market cycles. On the x-axis, are shown 252 trading days: one calendar year with Saturdays and Sundays stripped out. On the y-axis, is the modelled share price impact, where the horizontal line at zero indicates stock market expectations in the absence of a crisis.

FIGURE 1
The value impact



First, it is clear that the market makes its judgement rapidly as to expectations of future performance. Within the first few trading days, it becomes apparent whether the affected firm is emerging as a Winner or a Loser. Share prices move in response to new information. When crisis strikes, investors learn more about a company and, in particular, about the capabilities of its management team, than investors would learn ordinarily. This additional information forms the basis of a new market view of future performance. The market may be impressed and revise upwards its consensus estimate of future cash flow performance. Or investors' confidence in the management team may be eroded, and market expectations are revised downwards. Either way, the revised view tends to be sustained over at least the post-event year.

Second, the value at risk from a reputation crisis is considerable. Winners in the 2000 study outperformed market expectations by 10% while the Losers underperformed by 15%. By 2020, these impacts on value have doubled, with the Winners outperforming by almost 20% and the Losers underperforming by 30%.

The value at risk from a reputation crisis is considerable.

In the intervening two decades, the speed of information flow around the world has accelerated tremendously. Wireless and wearable technology, the introduction of camera phones, the burgeoning of social media, and the growth in intangible asset values all have conspired to exacerbate corporate reputation risk. Cultural and generational expectations have shifted, with the attendant aggravation of demands on business leaders whose every decision carries with it a value consequence.

Third, the opportunity to outperform is real. It is possible to emerge from a crisis with an enhanced reputation, depending on how well-prepared is the company and how well does it manage the aftermath. Figure 2 summarises the key drivers of value recovery, consistent through the 20 years of study.

The most important of these is risk preparedness. It is trivially true that companies that are more prepared and commit to loss prevention are less likely to incur loss. It is also the case that well-prepared companies are able to withstand the disruption better and recover strongly. All this requires leadership, both prior to any event in shaping the corporate culture and providing the necessary investment, and in the aftermath when navigating the storm. Effective communication, backed up by credible action, is critical. Finally, and arguably the most challenging, is a commitment to change. Executive management needs to convince a sceptical marketplace that the company now is fundamentally different; that lessons have been learned and that the renewed confidence of investors is deserved. This requires awareness, humility and a demonstrable willingness to change.

CYBER ATTACKS

Much has been written in the media to suggest that a data breach or cyber attack has no long-term impact on share price. The evidence suggests a more complex picture. In the 2000 study portfolio, there were no examples of cyber attack but, in the 2020 study portfolio, there are currently 30 examples of major cyber attack. When the impact on shareholder value is measured, the results for this subset follow those of the broader reputation crisis portfolio. Winners and Losers emerge with similar value impacts, and attributes akin to those summarised in Figure 2.

Well-prepared companies are able to withstand the disruption better and recover strongly.

However, when the subset of 30 major cyber attacks over the last ten years is partitioned into those that occurred in the first five years and those from the most recent five years, it appears that a change has taken place. The more recent subset underperforms the earlier subset by almost 15% (Figure 3).

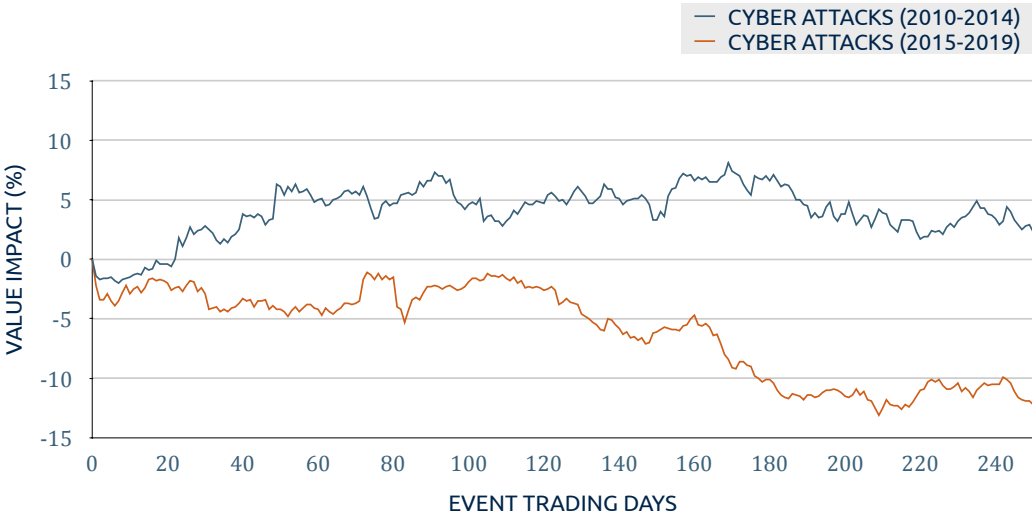
FIGURE 2
Hallmarks of Winners and Losers



	THE WINNERS	THE LOSERS
PREPAREDNESS	Deep commitment to loss prevention and mitigation	Failure to prioritise risk preparedness
LEADERSHIP	Strong visible leadership from CEO	Weak or delegated leadership, failure to take responsibility
COMMUNICATION	Accurate and well-coordinated communication	Opaque, partial or inconsistent communication
ACTION	Instant, global response and action	Delayed, absent or limited action
CHANGE	True remorse: commitment to meaningful change	Minimal, inauthentic, reluctant contrition (if at all)

In the early days of cyber attack, the market viewed the event more as an act of terrorism: external and unfortunate. Companies that suffered a data breach emerged relatively unscathed in share price terms. That view of corporate culpability has changed. Where, initially, cyber attacks were viewed as bad luck, they are now viewed as bad management, and companies are held responsible for their decisions concerning data protection and the mitigation of harm.

FIGURE 3
Changing impact from cyber attack



The introduction by the European Union of General Data Protection Regulation (GDPR), implemented in May 2018, encourages this view by placing the onus of responsibility firmly on corporate management. Failure to comply with GDPR can result in fines of up to 4% of annual global turnover or EUR20 million, whichever is greater. The size of the fine is a direct function of the commitment made to invest in effective cybersecurity measures to prepare for such an event, and of the decisions made in the immediate aftermath to identify, report and respond rapidly to any breach. The recommendations mirror well the hallmarks of Winners.

Companies are held responsible for their decisions concerning data protection and the mitigation of harm.

The California Consumer Privacy Act (CCPA), effective January 2020, is less stringent than GDPR. Penalties for non-compliance with CCPA are more benign also; but both regulations increase significantly the financial penalties for inadequate management of cyber risk, more particularly for decisions taken that failed to prioritise risk preparedness. Any signal that erodes investor confidence in the wisdom of managerial decision-making is going to lower valuations.

NATURAL DISASTERS

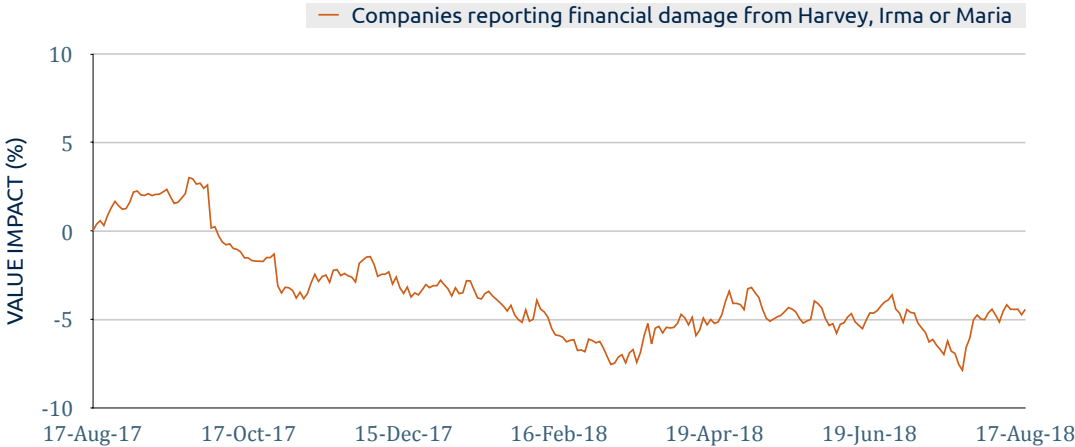
Twenty years ago, or even 10 years ago, the weight of value impact from natural disasters tended to fall on banks and (re)insurers, rather than on non-financial corporations. The insurance industry is in the business of bearing losses from such events, while banks may suffer a deterioration in their loan portfolios and consequent weakening in their lending capacity. With the change in market perception from bad luck to bad management already established in the realm of cyber risk, it is logical to revisit natural disasters.

Taking the 2017 U.S. hurricane season as an example, Figure 4 illustrates the average value impact on those non-financial, U.S.-listed companies (with annual revenue exceeding USD5 billion) that disclosed in their 2017 10-K statements financial damage from Hurricanes Harvey, Irma or Maria. The share price reaction is modelled across one year from the date Hurricane Harvey formed in the Atlantic. It will be remembered that Hurricanes Irma and Maria arrived close behind, all three hurricanes forming within a period of five weeks. Across the post-event year, the 52 companies identified suffered an average 5% drop in modelled shareholder value, equivalent to a total USD18 billion.

Investors have started to assess differently the ramifications of natural disaster.

This average value impact of -5% is equal to the average impact across the portfolio of reputation crises. At least from this case, it appears that investors may have started to assess differently the ramifications of natural disaster for non-financial companies.

FIGURE 4
New impacts from natural disaster



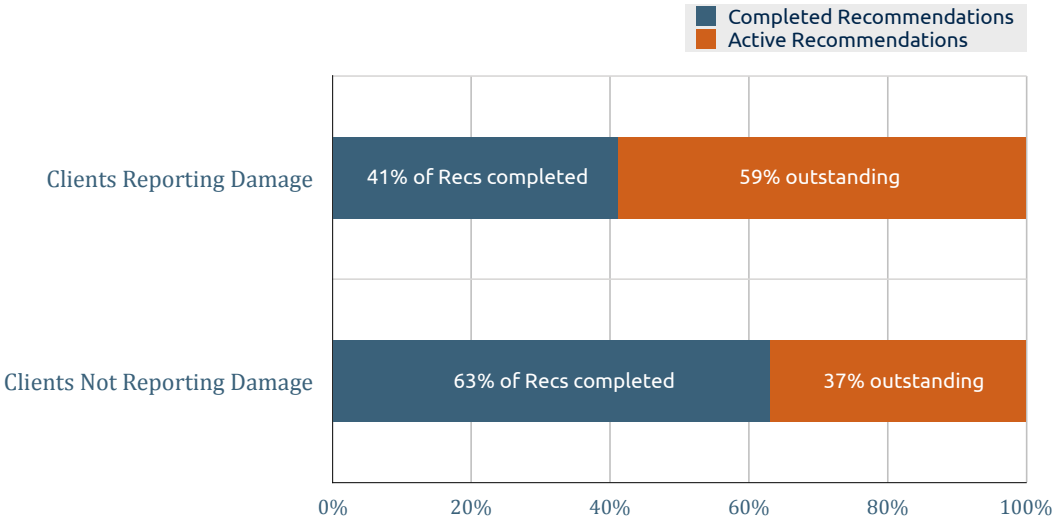
In order to investigate further, Pentland Analytics analysed engineering data from FM Global, a leading commercial property insurer that specialises in property protection and risk management. A portfolio was constructed of clients with more than 10% of their global insured property values in an affected area. Affected areas were defined as counties directly impacted by the peril flood during Hurricane Harvey, and by the peril wind during Hurricanes Irma or Maria. The affected areas are identified using satellite and aerial imagery, and are confirmed by the AIR Catastrophe Modelling System.

The percentage of applicable engineering recommendations that were completed across each client’s property portfolio in the affected area was calculated. The applicable engineering recommendations focused on improvements to flood protection for properties in the affected area for Hurricane Harvey, and on wind protection for properties in affected areas for Irma and Maria.

Figure 5 shows that, across clients that reported financial damage to the Securities and Exchange Commission (SEC) in their 2017 10-K, fewer than half of the applicable recommendations had been completed. Moreover, this group included no company that had completed all its recommendations.

In contrast, across the client portfolio with no material financial damage to report, almost two-thirds of the engineering recommendations had been completed, and over a third of this group had completed all their recommendations, as they pertain to wind and flood protection.

FIGURE 5
Property protection works

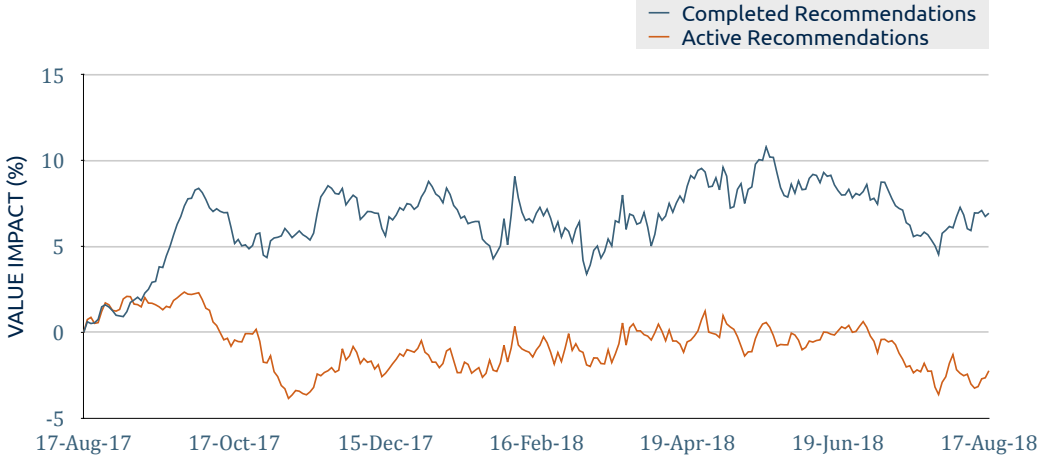


These results suggest first, that the engineers' advice is well-targeted and, second, that it pays to complete their recommendations, at least with respect to the exposures of wind and flood. Such analysis relates only to the direct financial damage, however, and does not offer insight to the long-term impact on performance. To evaluate the consensus market estimate of future, long-term performance, we return to shareholder value analysis.

Those clients who completed the recommendations outperformed by 10% those with recommendations outstanding.

Depicted in Figure 6 is the modelled share price performance, risk-adjusted and in excess of the market index, of the two client groups over the post-event year. Those clients who completed all the applicable recommendations at their properties in the affected areas outperformed by 10% those clients with wind and flood recommendations outstanding. The companies with well-protected facilities are not hindered by disruption, and the market revises upwards its estimates of future cash flow. In light of this new information, confidence in the decision-making and capability of these firms' executive management teams is revived.

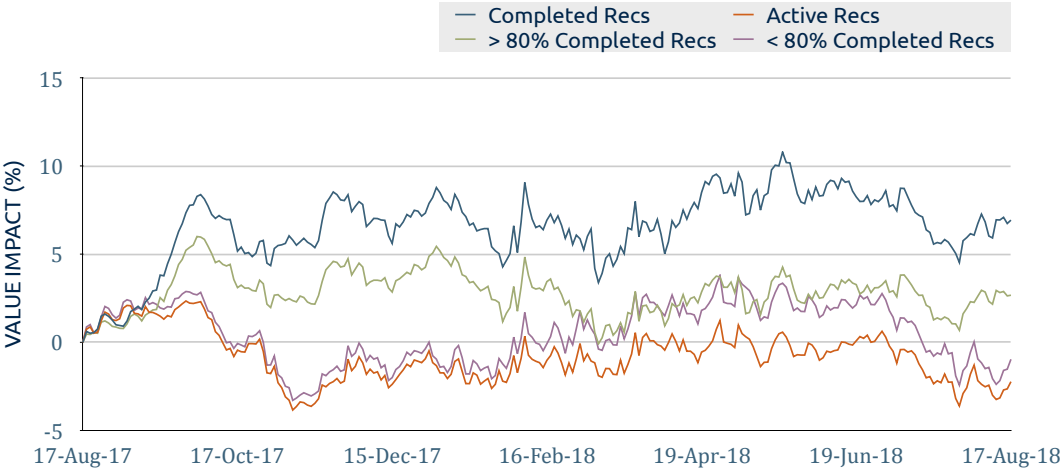
FIGURE 6
Prevention measures add value



This is a powerful result that demonstrates the value advantage of investing in loss prevention and risk preparedness. In respect of flood protection, the investment case is straightforward: the solutions are highly cost-effective and simple to install. When it comes to protection against windstorm, however, assigning the capital investment required can be a challenge.

In sympathy with chief financial officers everywhere who face stretched budgets, further analysis was conducted to determine whether the same value advantage is achieved by completing “most” of the recommendations, such as over 80% of them, or less than 80%. Figure 7 shows that the bulk of outperformance is achieved by those clients who consider resilience as binary: either their properties are well-protected or they are not.

FIGURE 7
It pays to be well-protected



Why this result should be so stark puzzled this writing economist, until shared with an engineer who pointed out bluntly,

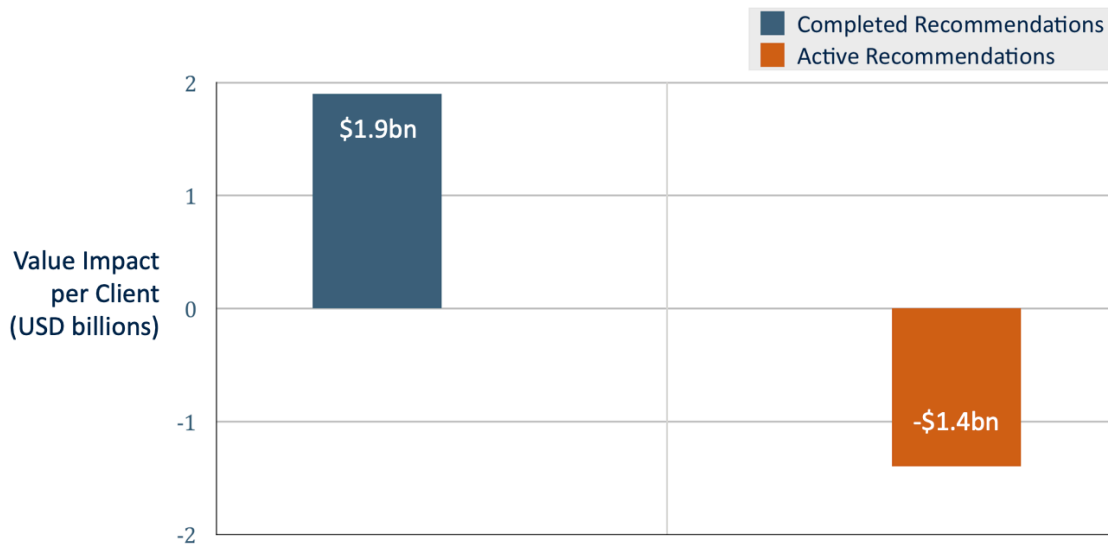
“Look - if you have four holes in your boat, and you plug three of them, you’re still gonna sink”!

Quite.

Figure 8 translates into dollar terms the average value impact per client for each portfolio: companies with well-protected facilities as regards wind and flood exposure, and those with recommendations outstanding.

Those companies with property portfolios resilient to flooding and windstorm were able to add an average USD1.9 billion to their valuations over the year following Hurricanes Harvey, Irma and Maria, while those not fully protected lost an average USD1.4 billion from their valuations. The spread between those well-protected and those without comprehensive wind and flood protection is USD3.3 billion on average in value terms.

FIGURE 8
The cost of disruption



This is not the cost of property lost or damaged. It is not even the loss in profits. Much of these direct costs may be covered by insurance. The value at risk is the cost of opportunities foregone. It is the cost of distracted management and missed targets, of market share permanently lost to the competition, of growth opportunities neglected and the legacy of dereliction in the strategic plan.

The research provides new evidence that investors have started to embrace natural disasters in their scope of risk assessment. More pertinently, a firm's value trajectory has started to reflect market opinion of executive decisions made to contain the threat of damage from natural hazards. The damage incurred from these natural perils that was considered previously to be bad luck is considered now to be poor management.

It is logical to expect growing scrutiny on firms' climate resilience. Decisions made to protect properties exposed to coastal flooding and the increased risk of wildfire, for example, would be central to such a risk assessment.

Equally, given the direction of regulatory travel witnessed with respect to cyber risk, it would be logical for regulators to consider extending corporate accountability also to the management of exposure to natural hazards and climate change.

This is not the cost of property lost or damaged. The value at risk is the cost of opportunities foregone.

3 Governance Matters

Leadership. Reputation risk. Regulatory compliance. Long-term value. Strategic oversight. Independent judgement. Accountability. The common thread is corporate governance.

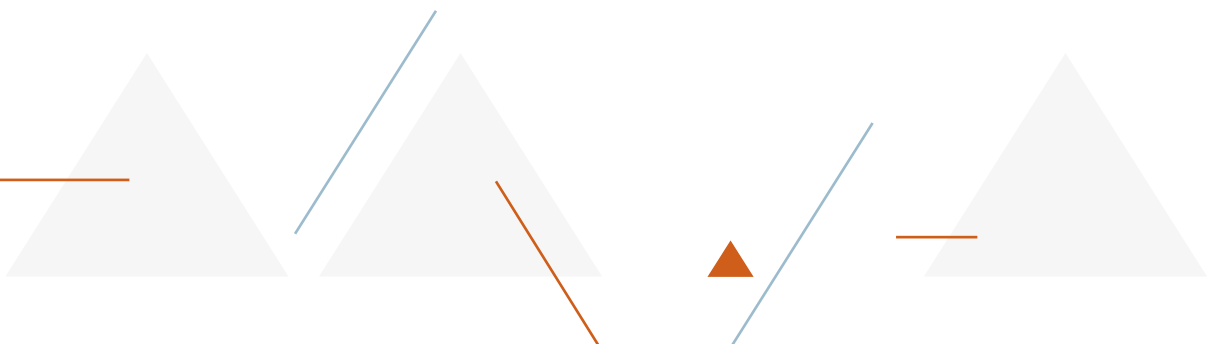
The last 20 years have seen the doubling in value impact from a reputation crisis, the arrival of cyber risk for which accountability now rests firmly with the organisation whose boundaries were breached, and the extension to natural hazards of the stock market's assessment of pre-loss and post-loss managerial decisions with respect to asset protection.

Climate change is in the crosshairs and the inexorable rise of technology continues to generate new risks. Public equity capital is increasingly competitive and mobile. If firms do not seek to generate and protect returns from that capital, it will go elsewhere. The demands on executive management possibly never have been greater.

As managerial agents, we manage business operations on behalf of our company owners, be they private company owners, mutual owners, shareholders or the state. Our common objective is to protect and build long-term value for our owners. Effective governance holds us to account for our decisions and actions, as they impact value creation and destruction. We are held accountable now for events, perils and behaviours where previously we were not. Cultural, technological, climatic and now regulatory changes demand a greater level of accountability from us all.

Given the substantial value at risk from a reputation crisis, a cyber attack or a natural disaster, it is incumbent upon us to do everything that we can ahead of time to protect our owners' assets, and to act swiftly in the immediate aftermath to minimise damage. If solutions exist to prevent loss or mitigate damage, and we do not employ them, the inescapable verdict is that our (in)actions are incompatible with the objective to protect long-term owner value.

Commitment to risk preparedness and crisis management is a governance imperative.



About the Author

DR DEBORAH PRETTY

Deborah has been at the forefront of risk analytics for over 25 years and is the Founder of Pentland Analytics.

Her research has been published extensively in academic and professional journals, and she has been honoured as guest speaker at numerous conferences around the world. Deborah authored the book, *Risk Financing Strategies – the impact on shareholder value* (1999), was a key contributor to the *Financial Times Mastering Risk* series and served for many years on the editorial advisory board of *Corporate Finance Review*.

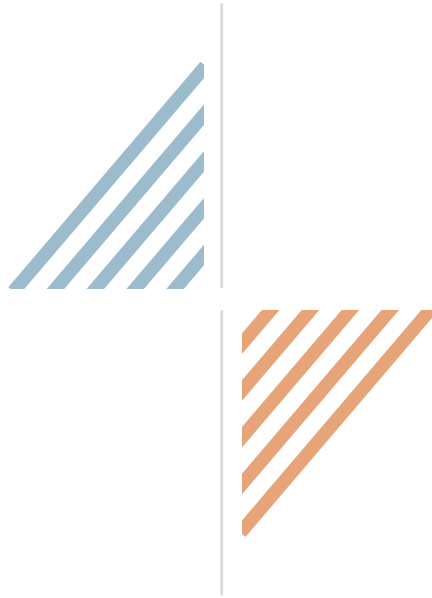
For her work in insurance economics, Deborah was appointed Research Fellow at the University of Oxford. Previous corporate roles include as co-founder and Principal of Oxford Metrica, Assistant Director at Sedgwick Energy, and risk analyst at Tillinghast. Deborah holds a BA (Hons) degree in industrial economics with mathematics from the University of Nottingham, and a DPhil from the University of Oxford.



About Pentland Analytics

Pentland Analytics provides advanced analytics and advisory services to the executive management of the world's leading companies. The firm converts complex business issues into innovative analytics solutions that yield new insights and direction. The results inform strategic decisions and help to build clients' resilience, reputation and long-term owner value.

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