



A world at risk
Closing the
insurance gap



Insurance is a key mechanism by which humans prepare for risk

Introduction

Humans have always sought ways to mitigate and prepare for risk. The earliest grain siloes guarding against unpredictable harvests, the first shipping insurance policy from 14th century Venice preparing for storms or piracy and modern cybercrime policies have all been developed to reduce the impacts of catastrophes.

Insurance is a key mechanism by which humans prepare for risk and has played a central role in the development of the global economy. Insurance policies create confidence, encourage innovation and enterprise, and ultimately enable human progress. For example, an 18th-century businessman was far more likely to invest their money in shipping fleets to trade globally once they had insurance in place and weren't just one storm away from financial ruin. Today's commercial space operations wouldn't be able to lift off without insurance backing their expensive cargo.

Conversely, where insurance is not available or has not been purchased, catastrophes can have major impacts on economies and lives. Assets such as schools, hospitals, businesses and infrastructure must be rebuilt after major disasters. Without insurance, this burden is often borne by the individuals affected who have lost their homes and livelihoods, the businesses whose factories and warehouses are damaged, and by governments that have to support them. If these assets are insured, it's private not public money that foots the bill.

The number of insurance policies has increased steadily since the Lloyd's coffee shop (where Lloyd's began) was established in 1686, and today more industries, countries and risk categories are insured than ever before. However, insurance cover is not ubiquitous, and the uptake of insurance is not uniform across the globe. Certain regions, industries and risk categories remain underinsured.

Underinsurance – defined as the value of assets at risk not covered fully by insurance policies – can also be represented as an 'insurance gap' i.e. the value of assets not covered for damage caused by a catastrophic event. Understanding how large this gap is, and where it exists, is important because it helps identify weak spots in global resilience. It is particularly essential for governments to know the extent of their insurance gaps so they can identify their exposure to uninsured losses they may have to finance.

Lloyd's published its first underinsurance report in 2012. This 2018 version includes all the latest non-life underinsurance and insurance penetration data for natural catastrophes for 43 countries across the globe, revealing in detail insurance levels across multiple regions and industries. The report also analyses flood insurance in more detail, and looks at how cyber insurance can help businesses reduce the impacts of cyber-attack, one of the fastest-growing emerging risks. By understanding the state of global insurance and underinsurance, policy officials, business leaders, communities and insurers can identify where insurance gaps exist and work together to close them.

Summary of key findings

The gap is hardly closing

Despite general global economic growth in recent years, the insurance gap is hardly closing. The global underinsurance gap is now US\$162.5 billion, a reduction of just over 3% over a period of six years (US\$168 billion in 2012).

Emerging countries are the least insured

Emerging economies account for \$160bn (96%) of the total global insurance protection gap.

The developed world buys more insurance

Average insurance penetration rate in the developed world is twice as high as in emerging countries.

Developing nations have the biggest gap

Bangladesh, India, Vietnam, Philippines, Indonesia, Egypt and Nigeria each have an insurance penetration rate of less than 1%. They are also among the most exposed countries to risks such as climate change and some of the least able to fund recovery efforts.

Bangladesh is the most underinsured country

The country with the highest expected annual loss from natural disasters, Bangladesh, also has the largest insurance gap relative to GDP (2.1%). An insurance gap in dollar values of almost \$6bn.

The 10 least insured countries are the same as those in 2012

Since Lloyd's 2012 underinsurance report, the risk profile of the top 10 countries facing the highest risk as a proportion of GDP has hardly changed.

China has the largest gap in dollar terms

In absolute terms, China has the biggest insurance gap (US\$76.4 billion) followed by India (US\$27 billion) and Indonesia (US\$14.6 billion).

New countries have become underinsured

Four countries have been identified as being underinsured since the last report (Japan, Russia, United Arab Emirates and Sweden).

Insurance levels are highest in the real estate sector

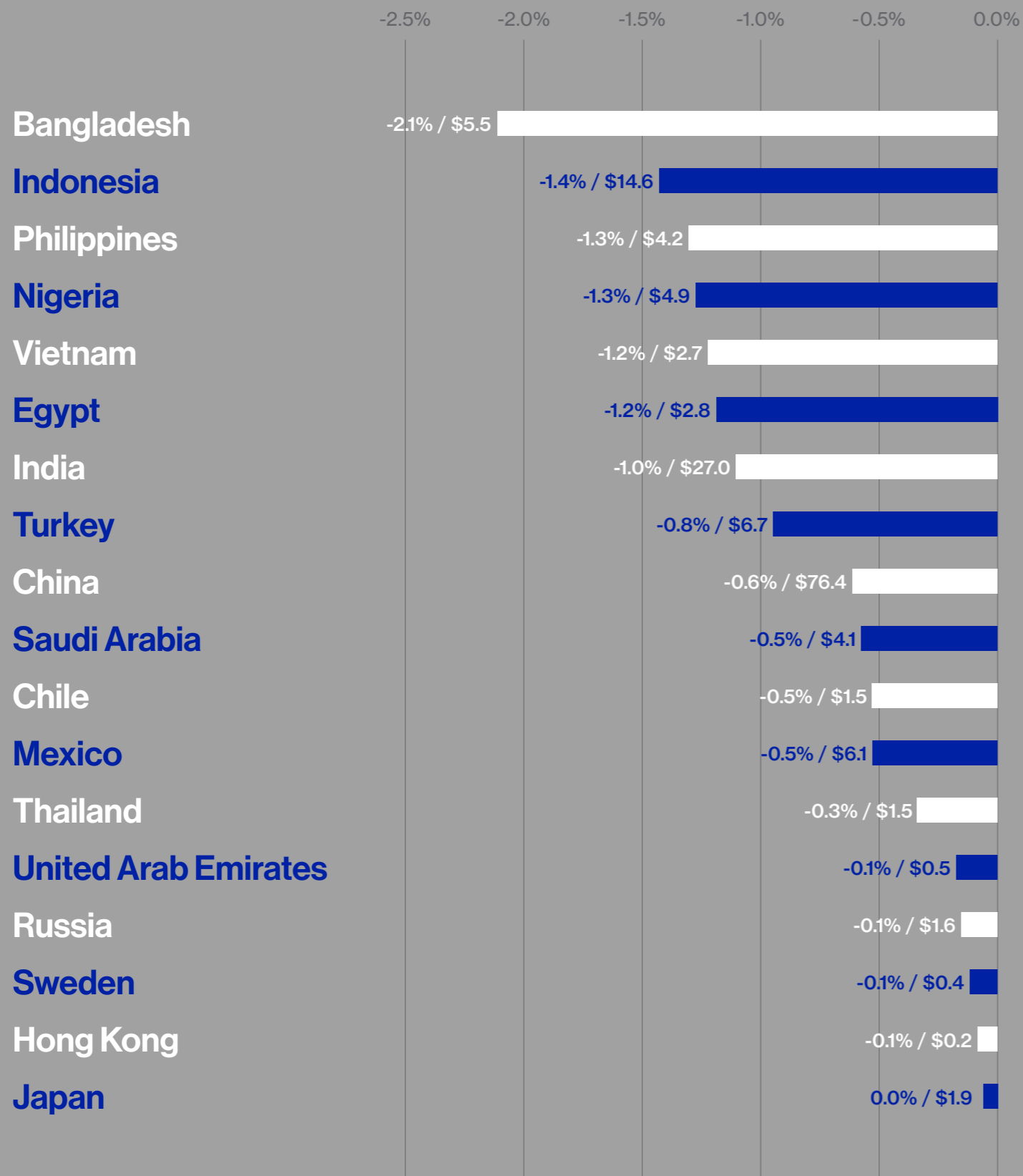
Real estate remains the best insured sector globally with an industrial insurance penetration rate of 0.74%. This is followed by transportation and storage (0.60%) and agriculture, forestry and fishing (0.60%).

The lowest insurance levels are in the manufacturing sector

Globally, the manufacturing sector has the lowest insurance penetration of all sectors at just 0.17%.

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1. The size of the global insurance gap

A world at risk, Lloyd's second underinsurance report, shows there is a global insurance gap of US\$162.5 billion in 2018. This shows there is a significant gap between the level of insurance in place to cover global risks, and the actual cost to businesses and governments of rebuilding and recovering from major catastrophes.

There is a marked split between emerging and developed economies. Of the gap identified, some US\$160 billion comes from emerging nations, and just US\$2.5 billion in developed countries. This is partly because developed nations tend to buy more insurance, and partly because they tend not to be as prone to natural disasters – two themes that will be explored in greater detail later in this report. The picture is not uniform. Some risks in developed economies are underinsured – earthquake in Italy and flood in the US, for example – while there are positive areas of improvement in emerging economies.

The US\$162.5 billion figure is only slightly lower than the 2012 total of US\$168 billion meaning the insurance gap has closed by just over 3% over the past five years. This limited progress in closing the gap comes at a time when the global economy has grown (meaning more assets at risk), the severity and frequency of weather-related catastrophes has increased, and new risks such as cybercrime have emerged to pose new threats to society. These trends are expected to continue.

Since Lloyd's 2012 underinsurance report, there have been few changes to the top 10 countries with the largest insurance gaps. This shows that insurance take up in these places is not increasing, despite the existing and rising threats to their economies.

The relative cost of the insurance gap

In relative terms, Bangladesh has the largest insurance gap at 2.1% of GDP, estimated at US\$5.5 billion (see table, left). This is similar to the level recorded in the 2012 report and represents a significant share of the country's economy and major potential loss in the case of a catastrophe. Second highest is Indonesia at 1.4% of GDP, and then the Philippines at 1.3%.

Today, the insurance premium per capita in Bangladesh is just US\$8, a statistic that masks the fact that most people have no insurance at all. Aside from affordability, which is a major barrier to adoption in emerging economies, some of the reasons people choose not to take out insurance include little understanding about the value and a lack of trust in insurance companies.

The country is making moves to improve its insurance penetration. In 2017, in partnership with the World Bank, Bangladesh launched an initiative to develop its insurance sector, strengthening the capacity of the local regulator and state-owned insurance companies to increase insurance coverage across the country.

US\$162.5bn

The size of the global insurance gap

Since the 2012 report several countries have slipped into becoming underinsured

1. The size of the global insurance gap

The relative cost of the insurance gap

Both Indonesia and the Philippines are heavily exposed to natural catastrophes, located as they are along the Ring of Fire region of the Pacific where most of the world's earthquakes and volcanic eruptions occur.

The Philippines also sits on the typhoon belt; annually, approximately 80 typhoons develop above tropical waters in the region, of which 19 enter the Philippine region and six to nine make landfall, according to the Joint Typhoon Warning Centre. While both countries have seen dramatic rises in their per capita GDP over the past 20 years, annual income remains low at just under US\$3,000 per capita for the Philippines and US\$3,500 in Indonesia. This has a dampening effect on investment in insurance, disaster prevention measures and early warning systems that help detect disasters before they occur.

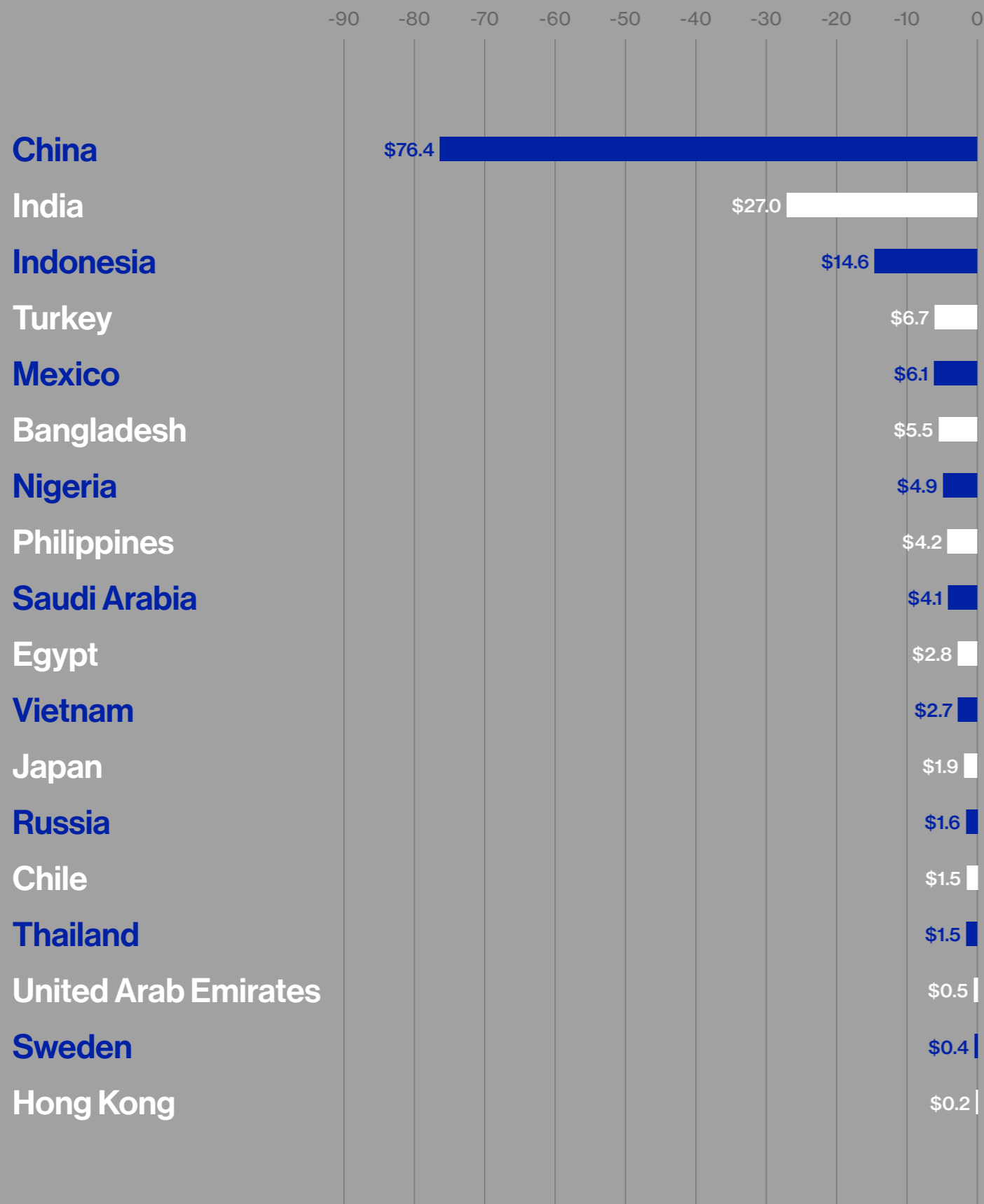
As in Bangladesh, measures are being taken to address underinsurance in Indonesia and the Philippines. For example, the Philippines Government has introduced the National Disaster Risk Reduction and Management Plan 2011-2028 under which a number of foreign and World Bank-backed initiatives are in place to help protect government-owned assets and infrastructure.

Keeping pace with shifts in risk

Since the 2012 report several countries have slipped into becoming underinsured, including Japan (0.04% of GDP), Russia, the United Arab Emirates and Sweden (all 0.1% of GDP). In each instance, insurance uptake has not kept pace with the changing risk landscape and potential GDP losses. That means, for example, that a country can maintain its insurance penetration levels, but the risk landscape can become more severe and therefore can be considered underinsured.

In Sweden, to take one example, the economy has grown significantly in recent years meaning that more assets are at risk. Meanwhile insurance penetration has dropped very slightly from 1.9% to 1.8%, not because people are not buying insurance but because insurance penetration is relative to GDP.

Global underinsurance in absolute terms (\$bn)



Source: EM-DAT, CEBR analysis

1. The size of the global insurance gap

The absolute cost of the insurance gap

While relative underinsurance gives the best picture of the potential impact on individual countries, absolute figures show the total global gap.

In absolute terms, China remains the country with the largest insurance gap due to the size of its economy and risk exposures (see table, left). Its insurance market, although growing rapidly, is still developing. Expressed in absolute US dollar values China has an insurance gap of US\$76.4 billion, or 0.6% of GDP. Between 2004 and 2017, around 98% of losses resulting from natural catastrophes were not covered by any type of insurance in China. This is slightly lower than the 99% recorded in the 2012 report, indicating China's insurance gap could be narrowing, albeit slowly. It is worth noting, however, that data for China is affected by the 2008 Sichuan earthquake that resulted in losses of around US\$125 billion. Only a fraction of this sum was insured.

The second and third in the list of absolute costs are India at US\$27 billion and Indonesia at US\$14.6 billion. These are the seventh and 17th largest economies in the world according to the International Monetary Fund, but both have relatively young insurance marketplaces. The combination of high GDP at risk and a newly emerging culture of insurance adoption means these countries rank highly in absolute losses. India suffers, as its neighbour Bangladesh does, from flooding and earthquakes in the north around the Himalayas, but with a far more developed economy, it has significantly more GDP potentially at risk in absolute terms.

At the other end of the spectrum, Germany, France and the UK are adequately covered relative to expected losses. Between 2004 and 2017, approximately two-thirds of the losses from natural catastrophes in these countries were recovered through insurance. All three have well-established insurance markets and culture of protecting against loss.

Not all European countries enjoy the same level of insurance cover. Over the same period, Italy suffered high levels of uninsured losses from natural catastrophes, including a series of earthquakes. The fact that only 12% of these losses were insured highlights the underinsurance in southern Europe, and represents an opportunity for the insurance industry in the region.

Variations in insurance cover also exist between countries in other regions. For example, in Africa, Nigeria has an insurance penetration rate of just 0.2% of GDP, whereas South Africa has a more favourable rate of 2.7%. Similarly, in Asia, Bangladesh is the country with the least penetration at 0.2% of GDP; in comparison Japan, a country with its own fair share of risk exposures, insurance penetration is 2.3% of GDP.

Insurance penetration by country (premiums as a % of GDP)

| | Insurance penetration % 2018 report | Insurance penetration % 2012 report | Rank 2018 report | Rank 2012 report | Change in position |
|----------------------|-------------------------------------|-------------------------------------|------------------|------------------|--------------------|
| Netherlands | 7.7 | 9.5 | 1 | 1 | ↓ |
| South Korea | 5.0 | 4.6 | 2 | 3 | ↑ |
| United States | 4.3 | 4.1 | 3 | 4 | ↑ |
| New Zealand | 4.2 | 5.2 | 4 | 2 | ↓ |
| Canada | 4.1 | 4 | 5 | 5 | ↑ |
| Australia | 3.5 | 3 | 6 | 10 | ↑ |
| Taiwan | 3.4 | 3.1 | 7 | 8 | ↑ |
| Germany | 3.4 | 3.6 | 8 | 6 | ↓ |
| Hong Kong | 3.4 | 1.4 | 9 | 31 | ↑ |
| France | 3.2 | 1.9 | 10 | 20 | ↑ |
| Austria | 3.0 | 3.2 | 11 | 7 | ↓ |
| Spain | 2.8 | 2.7 | 12 | 12 | ↑ |
| United Arab Emirates | 2.8 | 1.5 | 13 | 28 | ↑ |
| Denmark | 2.8 | 2.9 | 14 | 11 | ↓ |
| South Africa | 2.7 | 2.7 | 15 | 12 | - |
| United Kingdom | 2.4 | 3.1 | 16 | 8 | ↓ |
| Japan | 2.3 | 2.2 | 17 | 18 | ↓ |
| Israel | 2.3 | 2.4 | 17 | 14 | ↓ |
| Argentina | 2.3 | 2.3 | 19 | 15 | - |
| Italy | 2.1 | 2.3 | 20 | 15 | ↓ |
| Poland | 2.1 | 1.9 | 21 | 20 | ↑ |
| Morocco | 2.1 | n/a | 22 | n/a | - |
| Colombia | 2.0 | 1.6 | 23 | 27 | ↑ |
| China | 1.9 | 1.2 | 24 | 32 | ↑ |
| Sweden | 1.8 | 1.9 | 25 | 20 | ↓ |
| Chile | 1.8 | 1.8 | 26 | 23 | ↑ |
| Brazil | 1.8 | 1.5 | 27 | 28 | ↑ |
| Norway | 1.8 | 1.7 | 28 | 25 | ↑ |
| Thailand | 1.7 | 1.7 | 29 | 25 | - |
| Singapore | 1.6 | 1.5 | 30 | 28 | ↑ |
| Malaysia | 1.4 | 1.8 | 31 | 23 | ↓ |
| Saudi Arabia | 1.4 | 1 | 32 | 35 | ↑ |
| Turkey | 1.2 | 1.1 | 33 | 33 | ↑ |
| Mexico | 1.2 | 1.1 | 34 | 33 | ↑ |
| Ireland | 1.2 | 2.2 | 35 | 18 | ↓ |
| Russia | 1.0 | 2.3 | 36 | 15 | ↓ |
| India | 0.9 | 0.7 | 37 | 37 | ↑ |
| Vietnam | 0.8 | 0.9 | 37 | 36 | ↓ |
| Philippines | 0.6 | 0.4 | 39 | 40 | ↑ |
| Indonesia | 0.5 | 0.6 | 40 | 38 | ↓ |
| Egypt | 0.4 | 0.4 | 41 | 40 | - |
| Nigeria | 0.2 | 0.5 | 42 | 39 | ↓ |
| Bangladesh | 0.2 | 0.2 | 43 | 42 | - |

1. The size of the global insurance gap

National changes to insurance penetration

Since the 2012 report, there have been some notable changes to insurance penetration levels (see table, left). Hong Kong has increased its insurance penetration more than any nation in the study, with an increase of almost two percentage points between the 2012 and 2018 reports.

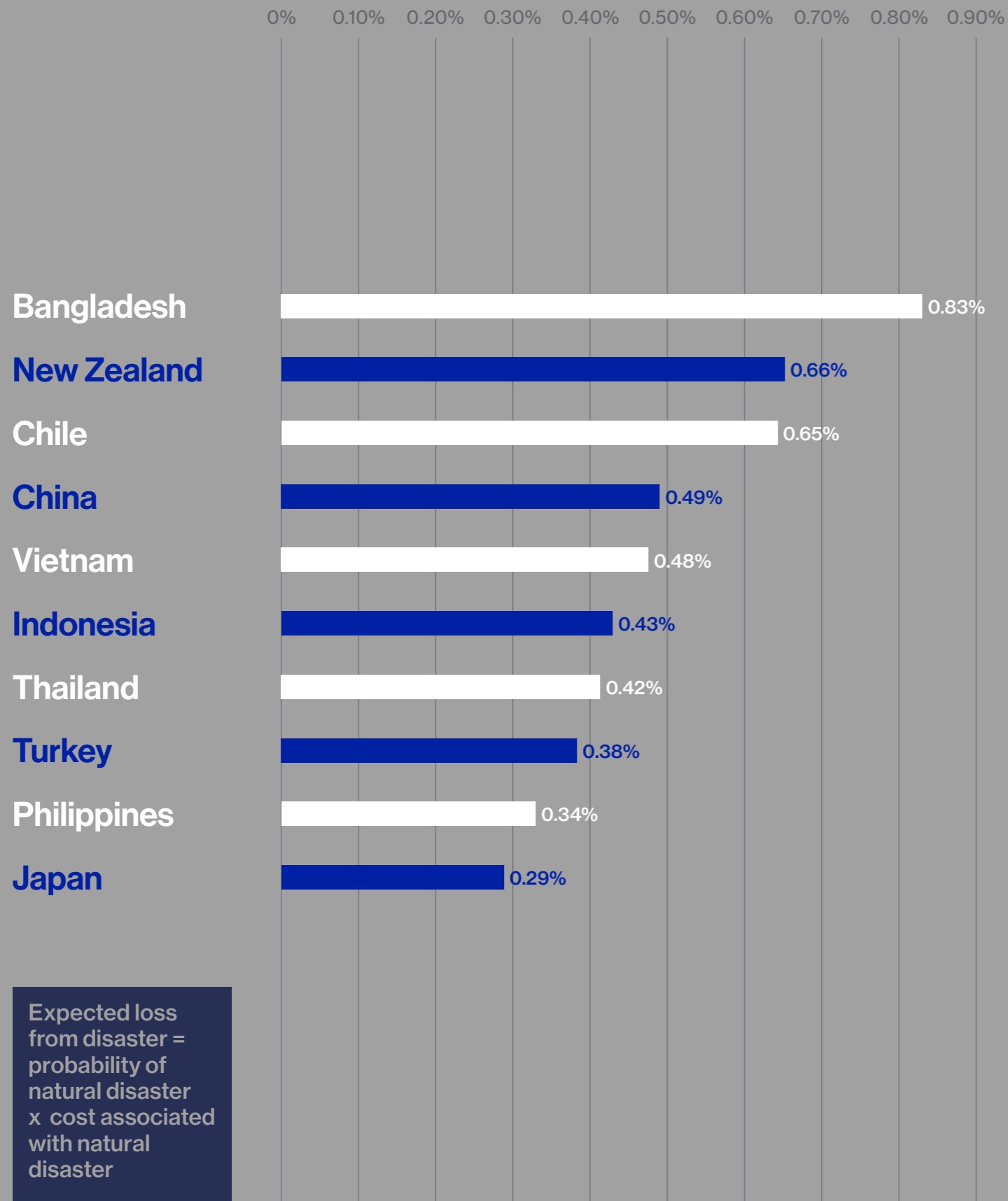
It is now the ninth highest in terms of insurance penetration as a percentage of GDP, up from 31st in the 2012 report. There are a number of factors that may have fed into this dramatic uplift. One is the number of severe weather events experienced by Hong Kong in recent years, for example typhoon Hato and storm Pakhar that hit the island in 2017. Events like these can prompt uplift in insurance take-up as a preventative measure. Non-life insurance in Hong Kong has grown at a compound annual growth rate of 6% since the 2012 report, and coupled with GDP growth of 3-5% will ultimately result in a rise in insurance penetration.

France has also seen a significant level of increase in insurance buying with a rise of 1.3 percentage points since the 2012 report to 3.2% in the 2018 report, driven largely by increased rates on motor and household personal lines. This moves the country from 20th to 10th in terms of insurance penetration as a percentage of GDP. The UAE also experienced a fairly dramatic rise, increasing its insurance penetration by 1.3 percentage points, meaning it is now the 13th ranked nation compared with 28th in the 2012 report. This is due in part to the work of the regulatory body, the UAE Insurance Authority, which has made significant progress in demonstrating the value of insurance given the notable low levels of penetration in the past. The large expatriate population and improvements to regulation have also improved standards and culminated in an increase in confidence and awareness of insurance products.

In some countries insurance levels have fallen. The UK's insurance penetration fell from 3.1% in 2011 data to 2.4% in 2017 data, down to 16th place from 8th. Ireland's fell from 2.2% in 2011 data to 1.2% in 2017 data over the same period, making it the 35th ranked country in terms of insurance penetration as a percentage of GDP; in the 2012 report it was 18th.

Within the top five countries with the highest insurance penetration, there is little change. The Netherlands remains the country with the highest insurance penetration at 7.7%. However, this is a decrease of 1.8% since the 2012 report. New Zealand is still among the top countries, but has slipped from 2nd to 4th place as insurance penetration reduced by one percentage point from 5.2% to 4.2%. After an initial flurry of insurance uptake in the wake of the Canterbury earthquakes, appetite for these products has slowed in recent years.

Annual expected losses by country (% of GDP)



1. The size of the global insurance gap

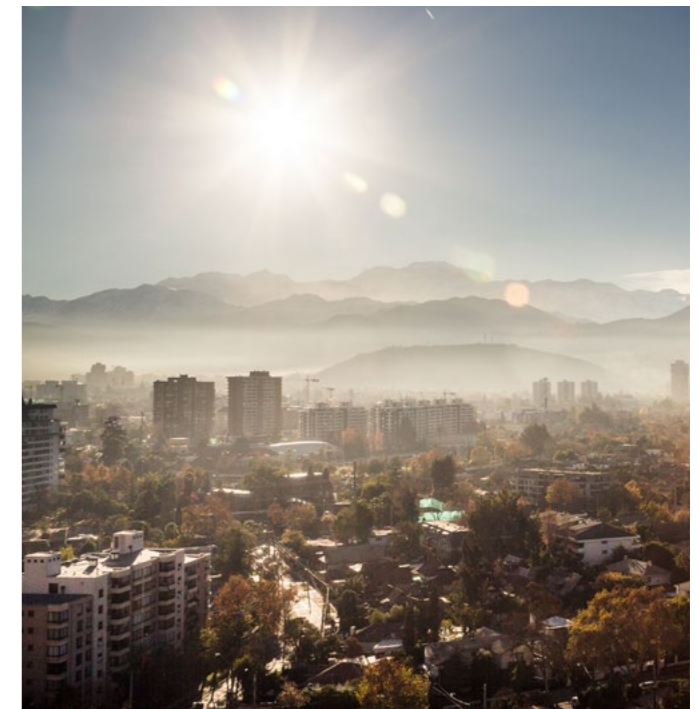
Expected losses from natural catastrophes

To put the level of insurance penetration into context, it is necessary to compare it to levels of risk exposure. Simply looking at insurance penetration ratios is insufficient.

For example, two countries may have the same insurance penetrations, but if one faces considerably more risk then it will have a higher insurance gap.

Since Lloyd's last underinsurance report, the risk profile of the top 10 countries facing the highest risk as a proportion of their GDP has hardly changed. As was the case in 2012, Bangladesh has the highest expected losses from natural disasters with an expected annual loss of 0.8% of GDP (see table, left). Combined with Bangladesh's low insurance penetration levels, this leaves the country highly exposed to the impacts of natural catastrophes.

New Zealand is number two on the list, with an expected annual loss of 0.7%; however, its high insurance penetration levels means it remains well protected. After the Christchurch earthquake of 2011, which caused damage equivalent to 14% of the country's GDP, the country has suffered from further seismic events and several significant floods. Chile, which was number two in the list in the 2012 report, drops to number three. While it has fallen down the list relative to New Zealand, Chile remains exposed to earthquakes, wildfires and volcanic activity.



India is the only country that has dropped out of the top 10 countries with highest expected annual losses as a percentage of GDP since the last report. This can be explained by the relatively low number of natural catastrophes in India in recent years, with the only significant property losses in Chennai, set against a rapidly-growing economy. In its place is the Philippines, which rises up the table in part due to a devastating typhoon that hit the country in 2013.

Image: Santiago, Chile

Case study Japan: the Kumamoto earthquake – a city left shaken

Located along the so-called Pacific Ring of Fire, the most active earthquake belt in the world, Japan is no stranger to seismic activity. The islands receive frequent low intensity earth tremors and volcanic activity in the region is rife. Destructive earthquakes and tsunamis also occur several times a century.

Despite being prone to these types of events, the earthquake that struck the city of Kumamoto in 2016 highlighted how underprepared some countries still are to natural disasters. The earthquake resulted in the death of around 50 people and left thousands more injured. Around 10% of Kumamoto's population, more than 180,000 people were forced take shelter at the city's various evacuation sites and more than 7,000 homes were destroyed.

After the event, the governor of Kumamoto acknowledged that limited resources had resulted in poor disaster planning and minimal disaster-response expertise. On top of this, insurance levels in the region were relatively low due, resulting in only US\$5 billion of the estimated costs being covered by insurance.

The economic impact of the earthquake and its aftershocks was also substantial. It is estimated the total damage was about US\$27 billion, mostly as a result of the impact on residential properties and their contents. The effect on the region's tourism was also significant with inbound tourist numbers falling 11.6% between October and December 2016.¹ The Japanese Government was also forced to spend approximately US\$11 billion on providing immediate support for disaster victims, funding reconstruction efforts and topping up the country's various disaster-relief budgets.

The level of underinsurance in Japan at the time meant the Kumamoto earthquakes were the third costliest earthquake events in the country's modern history, after Tohoku in 2011 and Kobe in 1995. They served as a wake-up call and drove home an important lesson: that while large earthquakes in the region are inevitable, preparedness is the key to minimising their impacts and speeding up post-disaster recovery.²

Key facts

| | |
|-----------------------------|-----------------|
| Total cost of damage | US\$27bn |
| Amount covered by insurance | US\$5bn |
| Insurance gap | US\$22bn |

¹ <https://www.japantimes.co.jp/news/2017/04/13/national/caught-off-guard-deadly-quakes-kumamoto-still-learning-lessons-one-year/#.W6JwU9NKjGg>

² <http://www.eastasiaforum.org/2016/06/15/lessons-in-managing-disasters-from-kumamoto/>

Hurricanes, and resulting wind and flood damage, are one of the costliest weather events, responsible for about half of the total losses among all US disasters costing more than US\$1 billion.³

This was particularly true in 2017 when the US and the Caribbean endured a trio of devastating hurricanes – Harvey, Irma and Maria – causing more than US\$217 billion-worth of total damage.⁴

Key facts

| | |
|--|------------------|
| Total cost of damage (all three storms) | US\$217bn |
| Amount covered by insurance | US\$92bn |
| Insurance gap | US\$125bn |

³ <https://edition.cnn.com/2018/01/08/us/2017-costliest-disasters/index.html>

⁴ The definition of total damage used by Sigma is also used throughout this analysis, that is: Total losses/damage is defined as: the financial losses directly attributable to an event – i.e. damage to buildings, infrastructure, vehicles etc. The term also includes losses due to business interruption as a direct consequence of property damage.

Case study US: A devastating trio of hurricanes

While all three hurricanes were different in terms of size and the areas they hit, they all highlighted one common theme – the high levels of flood underinsurance across some states in the US.

Hurricane Harvey

Houston is relatively prepared for extreme flooding, having invested in numerous flood protection projects over the years. However, a lack of funding has resulted in delays to vital upgrades and additional flood prevention methods, leaving the city at risk. Added to this, Houston has seen an increase in property development over recent years, which has led to less land available to absorb heavy rainfall. As a result, many experts argue that the city's poorly designed infrastructure leaves it more vulnerable to extreme flooding. When Harvey hit the city in late August 2017, the category 4 storm flooded Houston with more than four feet of rainfall. More than 300,000 structures in that region were flooded and an estimated 40,000 flood victims were evacuated to or took refuge in shelters.⁵ The damage caused by Harvey's flooding was catastrophic with economic losses of US\$70-90 billion and insured losses of US\$25-35 billion.⁶

Hurricane Irma

Florida is another flood-prone area with property owners buying far more federal flood insurance than any other state – 1.7 million policies covering about US\$42 billion in assets – but most residents in flood hazard zones are exposed. In fact, reports suggest that in the five years up until Irma, the state had seen the number of federal flood insurance policies bought drop by 15%, attributed to the price increase in policies approved by Congress in 2012.⁷ When Irma hit Florida on 10 September 2017, it was one of the most powerful storms ever seen in the Atlantic. The small island of Barbuda was one of the worst affected areas, with the small island taking a direct hit from Irma at its peak intensity. Irma's catastrophic winds caused destruction across the island, damaging or destroying about 95% of the structures. Economic losses totalled US\$60-95 billion and insured losses between US\$35-55 billion.⁸

⁵ https://www.nhc.noaa.gov/data/tcr/AL092017_Harvey.pdf

⁶ <https://www.rms.com/newsroom/press-releases/press-detail/2017-09-09/rms-estimates-hurricane-harvey-insured-losses-from-wind-storm-surge-and-inland-flood-damage-will-be-between-usd-25-and-35-billion>

Hurricane Maria

On 20 September 2017, Hurricane Maria hit the US territory of Puerto Rico – the first category 4 hurricane to directly impact the island in 85 years.⁹ The hurricane is ranked as the third most costly event in terms of insurance losses since records began in 1970. The destructive winds and rainfall from Maria produced extensive damage to buildings, homes and roads. In addition, the hurricane also knocked down 80% of Puerto Rico's utility poles and all transmission lines, resulting in the loss of power to essentially all of the island's 3.4 million residents. By the end of January 2018, electricity had only been restored to about 65% of the island.¹⁰ Maria caused economic losses of US\$30-60 billion and insured losses of US\$15-30 billion.¹¹

Economic impact

While the response to the three hurricanes in the US has been fast, their effects are being felt over the long term with all three hurricanes significantly affecting the US economy. Hurricane Harvey shut down at least 25% of the nation's oil-refining capacity, causing a spike in gas prices to a national average of \$2.67 per gallon. In Florida Hurricane Irma had a significant impact on the agricultural sector, destroying 50%-70% of the citrus crop and damaged many small businesses in the tourist industry. In Puerto Rico, damage such as the loss of power is expected to set the economy back significantly.

The total damage caused by the three storms amounts to US\$217 billion in the US. Of this, US\$92 billion was covered by insurance, leaving an insurance gap of about US\$125 billion.

⁷ <https://nypost.com/2017/09/07/most-floridians-in-irmas-path-dont-have-flood-insurance/>

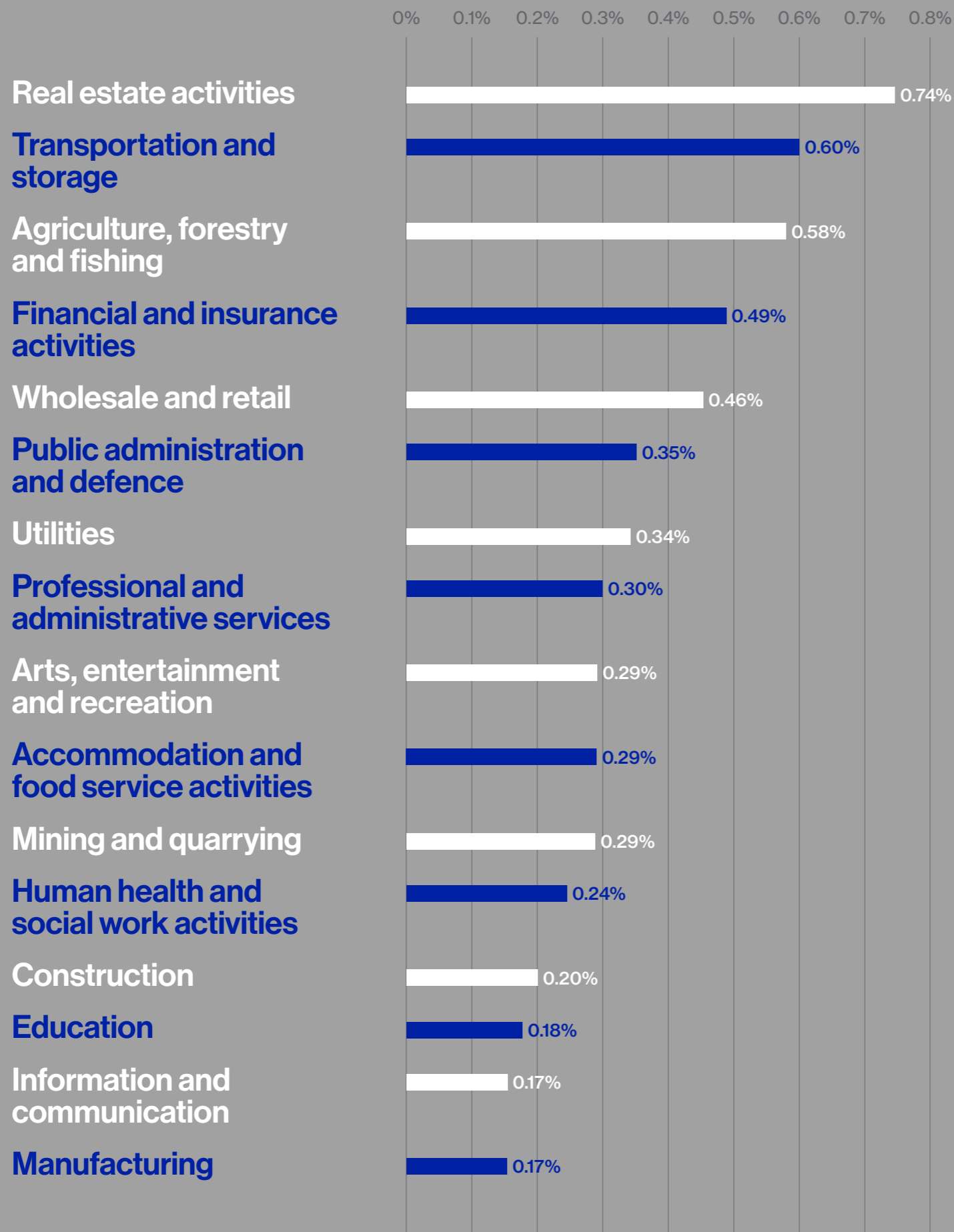
⁸ <https://www.rms.com/newsroom/press-releases/press-detail/2017-09-20/rms-estimates-hurricane-irma-insured-losses-from-wind-storm-surge-and-inland-flood-damage-will-be-between-usd-35-and-55-billion>

⁹ <https://edition.cnn.com/specials/weather/hurricane-maria>

¹⁰ https://www.nhc.noaa.gov/data/tcr/AL152017_Maria.pdf

¹¹ <https://www.rms.com/newsroom/press-releases/press-detail/2017-09-28/rms-estimates-insured-losses-from-hurricane-maria-will-be-between-usd-15-and-30-billion>

Average industrial insurance penetration (2018 figs)



The industrial insurance penetration figures shown are based on the average across countries
Source: National input output table, CEBR analysis

2. The insurance gap sector by sector

Insurance levels don't just vary across countries and continents but also across industries¹². This study shows that out of the 16 sectors studied, real estate is the best insured sector with a 0.74% industrial insurance penetration rate up from 0.59% in 2012 (see table, left).

Property is one of the most exposed sectors to natural catastrophes and has a clear claims history, so it is no surprise that more people are willing to buy insurance to protect their assets. This relatively high insurance level is also driven by the fact that the majority of household assets are often tied up in property meaning most people are incentivised to take out buildings insurance to protect them.

The second best insured sector is transportation and storage, albeit down from 0.78% in the 2012 report to 0.60% in 2018. Global supply chains are highly exposed to catastrophes – the 2011 Thai floods and the 2015 Tianjin Port explosion, for example – and insurance is widely accepted by the sector as an effective means of risk transfer. As with property, there is a long history of insurance, with motor and transport insurance developed from early shipping insurance. The US and Germany have the highest rates of insurance penetration in this sector, at 1.44% and 1.33% respectively.

The agriculture, forestry and fishing sector has the third highest level of industrial insurance penetration. Crop policies are well established and understood by farmers who regularly face the risks posed by unpredictable weather. Insurance is predominantly taken out for valuable cash crops rather than subsistence or low margin farming, meaning there is a stark divide in insurance uptake between developed and emerging economies.

¹² (Note: the methodology does not include industries' use of captive or self-insurance; this is particularly relevant for Germany).

Average industrial insurance penetration (2012 figs)



Case study France: The frost vintage

France is traditionally known for its agricultural products and, in particular, for the wines that it produces with exports totalling US\$15.9 billion in 2017.¹³

However, climate change is having a significant impact on the country's wine-growing regions, with increasing temperatures leading to earlier harvests and riper grapes. In April 2017, the early spring combined with some of the worst frosts the country had experienced since 1991, had a devastating impact on grape harvests.

With temperatures dropping to -7°C, vintners tried to take precautions by using lit oil drums, heaters and helicopter downdraughts to keep vineyards warmer and stop frost settling. While these advanced frost protection techniques were affordable for larger estates, a vast number of small-scale winemakers could not afford them. The extreme temperatures, however, meant that even these techniques had little to no affect. The freezing conditions destroyed the vines' fragile roots and buds, resulting in the country experiencing its worst harvest since 1945, with wine production dropping 18% compared to 2016.¹⁴

One of the worst hit areas was the famous wine region of Bordeaux, which saw several thousand hectares of vineyards hit by frost. This resulted in a drop of 40% in its harvest, the equivalent of 240 million litres of wine. Some chateaux reported losing up to 90% of their yield.¹⁵ Vineyards in the northeastern region of Alsace, known for its aromatic white wines, also suffered from the frost with an estimated 30% fall in wine production.¹⁶

The economic impact of the frost was significant. Total damage caused by the extreme weather is estimated at US\$4.2 billion of which just US\$1 billion was insured - less than a quarter.¹⁷ Experts have suggested that the reason for the large insurance gap is, in part, to do with the cost of frost insurance. As a result, few vintners invest in the protection despite it being widely available. A further challenge is that prestigious 'big brand' wine producers don't value insurance as highly since the insurance only covers the value of the grapes lost, not the full amount of the bottled wine.

Following the frosts, the national Appellation d'Origine Protégée (AOP) committee announced it would be working closely with the Government to put in place measures to improve insurance regimes for vintners.

¹³ <https://www.reuters.com/article/france-wine/french-wine-and-spirits-exports-hit-new-record-in-2017-idUSL8N1Q435C>

¹⁴ <https://www.theguardian.com/world/2017/aug/25/france-faces-worst-wine-grape-harvest-since-1945>

¹⁵ <https://www.theguardian.com/world/2018/feb/01/bordeaux-wine-harvest-falls-france>

¹⁶ <https://news.sky.com/story/french-wine-production-to-fall-18-this-year-after-spring-frost-11004891>

¹⁷ http://www.sigma-explorer.com/explorer/scatter/index_scatter_plus_modal_losses.php?auswahl=Storms|Floods|Droughts,%20bush%20fires,%20heat|Cold,%20frost|Hail&continent=World&year=2017

Key facts

Total cost of damage **US\$4.2bn**

Amount covered by insurance **US\$1bn**

Insurance gap **US\$3.2bn**



The financial and insurance sector has the fourth best industrial insurance penetration rate in the report

2. The insurance gap sector by sector

One of the biggest improvers in terms of insurance take-up since the 2012 report is the public administration and defence sector, which has risen up the table from 11th to the sixth-best insured sector today. Insurance levels increased from 0.31% in 2012 to 0.34% in 2018.

This increase is mainly driven by greater insurance uptake in Ireland and Singapore. In the 2012 report, in Ireland this sector was the 15th highest in terms of insurance penetration with a rate of 0.25%; in 2018, this rose to 2.27%, making it the best insured sector in Ireland. In Singapore, this sector also has the highest industrial insurance penetration - at 0.53% compared to 0.17% in the 2012 report.

Global insurance take-up in the human health and social work sector has also increased to a small degree, increasing from 0.22% to 0.24%. This has moved the sector up from the 16th-highest ranked industry in the 2012 report to the 12th highest in the 2018 report. One of the reasons for this change is the significant insurance buying in this sector in the US. Although the health and human sector was the lowest insured sector the US in the 2012 report, with insurance penetration of 0.78%, in the 2018 report it is the highest ranked sector with an industrial insurance penetration of 3.76%.

Ireland's insurance purchasing in this sector is another driver for the global increase. The country saw insurance penetration increase from 0.33% in the 2012 report to 0.74% in the 2018 report, making it the eighth-highest ranked sector in the country.

The financial and insurance sector has the fourth best industrial insurance penetration rate in the report, driven by eight countries' (the UK, the US, Spain, Poland, the Netherlands, Germany, Austria and Australia) high levels of insurance. This sector is in the top three of the highest levels of industrial penetration in all these countries, with Australia seeing one of the highest increases from 0.20% in the 2012 report to 0.94% in the 2018 report. It is now the second highest-ranked industry in terms of industrial penetration in the country. In part, this may be explained by the relatively soft market in Australia since the last report, making the take up of insurance more attractive as companies look to offload risk away from their balance sheets.

| | 2018 report rank | 2012 report rank | Difference |
|---|------------------------|------------------------|------------|
| Real estate activities | 1 | 3 | 2 |
| Transportation and storage | 2 | 1 | -1 |
| Agriculture, forestry and fishing | 3 | 2 | -1 |
| Financial and insurance activities | 4 | 4 | 0 |
| Wholesale and retail | 5 | 5 | 0 |
| Public administration and defence | 6 | 11 | 5 |
| Utilities | 7 | 8 | 1 |
| Professional and administrative services | 8 | 7 | -1 |
| Arts, entertainment and recreation | 9 | 10 | 1 |
| Accommodation and food service activities | 10 | 9 | -1 |
| Mining and quarrying | 11 | 6 | -5 |
| Human health and social work activities | 12 | 16 | 4 |
| Construction | 13 | 14 | 1 |
| Education | 14 | 15 | 1 |
| Information and communication | 15 | 12 | -3 |
| Manufacturing | 16 | 13 | -3 |

2. The insurance gap sector by sector

Despite exposure to a variety of risks, the manufacturing sector globally has the lowest insurance penetration of all sectors analysed at 0.17%, down from 0.24% in the 2012 report.

The top countries for manufacturing insurance penetration are France and Ireland, while Germany is only fifth highest despite manufacturing being a dominant sector (see table, left). Given exposure to risk and the high cost of potential loss, it seems counterintuitive that insurance uptake is so low. One potential reason for this is that as manufacturing is highly competitive and operates on what can be low margins; companies are unwilling to cut into their profits by buying insurance. Another possible cause is that pricing insurance for complex machinery can be challenging, leading to less than optimal levels of insurance.

Overall, insurance uptake in specific sectors can fluctuate depending on specific loss events. Large losses serve as a reminder of the value of insurance and the need to safeguard against future risk. However, an adverse reaction can also be caused as catastrophes lead to higher insurance pricing. Companies, especially those in highly competitive sectors, may take the view these products are no longer as affordable, meaning certain sectors neglect to take up sufficient cover just as they need it most.





US\$30bn

Global economic losses
from floods exceeded
\$30bn in 2016

Flooding has been the most common type of natural disaster in recent years

3. Natural disasters: flood risk

There is an increasing risk of flooding in many parts of the world, much of it driven by the impacts of climate change, which include variations to rainfall patterns and the loss of wetlands from rising sea levels.

There are also several human factors that contribute to flood risk including agricultural practices, deforestation, land reclamation and the rising global population. This complex matrix of factors is creating flood risk in areas other than recognised flood plains, with natural flooding patterns augmented by unpredictable flood events. This makes predicting and managing floods extremely difficult.

Flooding has been the most common natural disaster in recent years – with the annual GDP at risk from flooding estimated to be US\$42.9 billion globally according to Lloyd's City Risk Index.¹⁸ This compares to earthquake at US\$33.9 billion and drought at US\$8.9 billion.

This increasing threat to business and communities makes it more essential than ever that business and governments prepare for flood events. Measures include developing contingency plans, building greater resilience and ensuring adequate post-disaster recovery. Insurance cover also plays an important role in reducing flood risk and helping businesses and communities recover from its effects.

High-risk flood areas

Asia suffers more floods than any other continent, more than 600 since 2008, with four of the top 10 most serious floods since 2008 occurring in China. The most damaging in terms of economic losses were the 2010 floods, caused by heavy monsoon rain in the eastern and southern provinces. In just 48 hours, the rainfall in some areas measured more than 400mm. The floods lasted 20 days and killed an estimated 2,000 people across the 28 areas affected. Despite the extent of the damage, only 1.5% of the losses were insured. Similar to the findings of the 2012 report, China remains the country with the largest share of uninsured losses, with around 98% of losses resulting from natural catastrophes not covered by any type of insurance.

Thailand continues to be one of the top 10 countries in the world with the highest expected losses from natural disasters, with an expected annual loss of 0.42% of GDP. In 2011, a heavy monsoon season caused widespread flood damage, with 5.5% of the country's total landmass affected. The floods affected 66 of the country's 77 provinces with more than one million houses destroyed or damaged, resulting in total insured losses of US\$16 billion versus uninsured losses of US\$34 billion, the largest in the country's history.

¹⁸ <https://cityriskindex.lloyds.com/>

30cm

The amount that sea levels are expected to rise by 2040



3. Natural disasters: flood risk

High-risk flood areas

As in the previous report, Bangladesh continues to be prone to flooding and has an expected annual loss of 0.8% of GDP from natural catastrophes, the highest of any of the countries studied. In addition, since the 2012 report two floods took place that were some of the most destructive the country had ever experienced.

The country remains vulnerable to damage from flood risk because of its population density, the fact that most of its landmass forms the delta of three large rivers – the Brahmaputra, Ganges and Meghna – and that a quarter of the country is less than one metre above sea level.

Flooding is part of the natural environment in Bangladesh. These rivers burst their banks as part of a seasonal inundation, fuelled by snowmelts in the Himalayas. This floodwater is highly beneficial as it irrigates the country's two major crops, rice and jute, and helps keep the soil fertile. However, the scale of the flooding is difficult to predict. In addition, Bangladesh experiences many tropical cyclones that can also trigger damaging floods. Human activity, such as building on floodplains and cutting down trees, exacerbates the effects of rising waters.

Widespread poverty intensifies the impacts. Many locals do not have phones or televisions, making it difficult for officials to issue meaningful flood warnings. The challenge for Bangladesh is that as a less economically developed country it does not have the money to implement large-scale flood defence schemes. Other organisations are helping - The World Bank currently funds a flood action plan, which includes building artificial levees and introducing flood monitoring schemes, but the country remains highly exposed to flood risk.



This situation is set to become more acute in the coming years. Under the current conditions, it is expected that sea levels will rise by 30cm by 2040, which the World Bank estimates could result in the loss of about 11% of crop production in the Southeast Asia region.

Top 10 most serious floods by economic losses
(by economic loss – 2008-2017)

| | Year | Economic losses (\$bn) | Insured losses (\$bn) |
|------------------|------------------|------------------------|-----------------------|
| China | 2010 | 58.3 | 0.86 |
| Thailand | 2011 | 50.11 | 16.34 |
| China | 2016 | 22.46 | 0.41 |
| Germany | 2013 | 17.39 | 4.35 |
| Australia | 2010/2011 | 12.46 | 4.53 |
| US | 2008 | 11.38 | 0.51 |
| US | 2016 | 10.21 | 3.53 |
| China | 2012 | 8.54 | 0.15 |
| Pakistan | 2010 | 7.24 | 0.51 |
| China | 2011 | 6.97 | 0.21 |

3. Natural disasters: flood risk

Levels of flood insurance

Bangladesh's situation is common amongst many emerging economies that are exposed to natural catastrophes and where levels of flood insurance remain close to non-existent.

As expected, developed countries have much higher insurance rates for flooding. However, differences in policies across countries mean that where flood risks are automatically included in insurance policies for households and businesses, penetration rates are generally higher.

For example, in the UK, take-up rates for residential property insurance are more than 90%, while for home contents (for which flood damage insurance is not required by mortgage lenders) insurance penetration can drop to just 44%. Penetration rates in other countries where flood risk is included in standard coverage, including France and New Zealand, are also high.

In countries where flood coverage is an optional add on - such as Portugal and the US - insurance penetration is generally much lower. In America, for instance, flood insurance is only required if you live in a designated 'flood zone'. However, recent years have seen areas that are not classified as at risk being hit hard by floods, showing the need for new analysis and mapping of risk. The National Association of Insurance Commissioners has found that half of US flood losses occur outside the designated high risk areas, yet only 1% of properties outside of flood zones have flood insurance. This issue with mapping can be found in developed economies, and is more acute a situation still in emerging nations where this data simply does not exist.

The industry impact

As the table opposite shows, for the top 10 floods in the decade to 2017, only a small proportion of flood damage tends to be covered by insurance. On average across the 10 floods shown, just 15% of the losses were covered by insurance companies.

One of the key reasons for this low level of insurance is that as the number of natural catastrophes such as flooding increase, so do insurance prices. As a result, businesses, governments and households less at risk are deterred from taking out insurance.

Another reason for underinsurance against flooding is the prevalence of adverse selection in this market. That is, people who buy flood insurance are those who know they are most at risk, driving up price, and as price inflates uptake declines. It is also the case that many homeowners believe their property is insured by their regular home insurance policies, which is rarely the case. Awareness raising is an important initiative to encourage insurance uptake.



1%

Percentage of US properties outside flood zones that have insurance

3. Natural disasters: flood risk

The industry impact

Where there are blocks, for example, prohibitively expensive policies for assets located in flood-prone areas, governments need to consider providing state-backed policies that are attractive and affordable.

These can be challenging for governments to establish and run effectively. The US national flood insurance programme suffered debts of US\$26 billion after hurricane Harvey following widespread destruction. However, even in this government programme, premiums have increased and uptake is decreasing. In Houston, for example, 80% of residents do not have enough insurance.¹⁹

In the UK, Flood Re (established 2016) is not primarily 'state-backed' but instead risks are pooled among all insurers offering flood policies. In an extreme case, the Government would step in as the final guarantor. The UK also seeks, as many countries do, to implement an engineering solution to flooding. These schemes are only typically considered, however, when a return of investment of 8:1 can be achieved.

If, as expected, floods become more regular due to climate change, more households and businesses will need to consider insuring their homes and businesses against flood damage or risk having to pay out significant sums of money post disaster.

According to the United Nations Office for Disaster Risk Reduction, flooding has accounted for nearly half of all weather-related disasters worldwide since 1995, killing an estimated 157,000 people and affecting some 2.3 billion others. UN statistics show the number of floods per year has gone up during this period, with the death toll also rising in many parts of the world.

¹⁹ www.reinsurance.ws/hurricane-harvey-flooding-exposes-widespread-underinsurance-lloyds/



Case study The 2013 German floods: the risk of underinsurance

In 2013, catastrophic flooding hit central and southern Europe. The floods were particularly severe in Germany where the river Danube rose to levels not seen for 500 years, claiming 26 lives and leaving behind US\$17.4 billion worth of damage. The total damage was estimated to represent 0.46% of GDP.²⁰

The Bavaria and Saxony regions of Germany are prone to flooding, and after the devastating floods of 2002, officials had prepared the region should similar catastrophes occur in the future. Many towns, businesses and households increased their flood prevention and water defence mechanisms, which went some way to limiting the damage caused by the 2013 floods. Preparations did not go far enough. In some areas, there had been disputes as to the efficacy of flood prevention engineering after 2002, which had postponed some of the planned work. This left towns exposed when the 2013 waters rose.

It was also the case that only a quarter of losses was insured, resulting in an insurance gap of US\$13 billion. It was widely reported in the press that many households did not have natural hazard cover precisely because they lived in flood-prone areas, and so could not secure insurance at a reasonable price. The German insurance market estimated that only a third of home insurance policies included natural hazard coverage at the time. It should be noted that then as now flood insurance is not mandatory, which has an impact on penetration rates.

The flooding had a significant impact on the German economy, at a local and a national level. The German Government was forced to finance a US\$9.4 billion flood aid fund, which affected states are repaying over a 20-year period. Tourism was impacted by the floods too, with visitor numbers to Saxony down year-on-year.

As European climate patterns become increasingly erratic, and flooding becomes more common across the continent, floods will increase in frequency. Governments must work with insurers, business and communities to ensure flood damage is adequately insured and to break down any barriers that are preventing higher take up of insurance.

Key facts

Total cost of damage **US\$17.4bn**

Amount covered by insurance **US\$4.4bn**

Insurance gap **US\$13bn**

²⁰ Source: Swiss Re, Sigma, IMF

US\$608bn

The amount cyber-attacks were estimated to cost businesses in 2017

The potential impact of the loss of data and associated revenue is hard to quantify

4. Emerging threats: cyber

At the same time as natural catastrophe risk is increasing, a new set of risks are emerging that pose an equal threat to the global economy. One such risk is cyber-attack.

Exponential growth of digitisation is transforming how organisations of all sizes store and communicate information. Moreover, developing trends such as big data analytics and smart technologies are set to dramatically boost the volume and importance of digital assets. This, and the dependency of many services on large amounts of commercially valuable personal information, increases the appeal of digital theft.

It is little wonder that cybercrime and cybersecurity have become daily realities for business and governments around the world. In 2017, cyber-attacks were estimated to cost businesses somewhere between US\$445 billion and US\$608 billion a year globally²¹. The potential loss of data, revenue and reputation resulting from a cyber-attack can add to the destructive nature of threat.

Mixed levels of cover

Despite the prevalence of data breach stories in the media and the magnitude of the potential risks, research suggests there is still a lack of understanding about the value of cyber liability insurance. Companies and organisations often give precedence to traditional forms of protection such as property, in the belief that cybersecurity is an IT matter and best dealt with using digital tools.

In addition, insurance cover is generally determined by the risk an organisation faces. Unfortunately, the potential impact of data loss and associated revenue is hard to quantify, as there is limited historical information available.

Another reason for the level of underinsurance is a lack of understanding of the cyber threat and how cyber insurance can help. According to 77% of decision makers in the insurance industry, one of the biggest reasons for not purchasing cover is that potential buyers do not understand their exposures²². This shows that in spite of a growing concern about cyber-attacks many senior managers do not know the specific threats their company faces, due to the increasing complexity of digital ecosystems.

²¹ <https://securityintelligence.com/news/global-cost-of-cybercrime-exceeded-600-billion-in-2017-report-estimates/>

²² 2017 survey of cyber insurance market trends: PartnerRe & Advisen

46

The number of US states that have mandatory requirements for data breach notifications

4. Emerging threats: cyber

Geographical variations

When it comes to cyber insurance, levels of engagement vary around the globe. For example, the cybersecurity insurance market is more mature in the US primarily because 46 of the 50 US states have mandatory requirements for data breach notification. Compulsory regulations for reporting data breaches are in part a driver for insurance as the costs of notifying affected users can be extremely high.

In comparison, Europe has lower levels of cyber insurance uptake mainly due to the lack of a strict set of regulations across the region. The insurance take-up rate was 55% in the US in 2016, compared to 36% and 30% in the UK and Germany, respectively²³. However, this is expected to change with the recent introduction of the Global Data Protection Regulation (GDPR). This legislation, introduced in May 2018, means any organisation doing business with clients in the EU needs to notify the regulator and individuals if a breach of personal data takes place. If a company does not comply, it could be fined up to 4% of their global revenue, or €20 million, whichever is higher. As a result, Europe is expected to be a major growth area when it comes to cybersecurity, including insurance.

Despite the rapid growth in digitalisation across the APAC region, governments have been slow in implementing similar types of laws. For example, many APAC countries still lack notification clauses for data breaches, with the exception of Japan, Australia, South Korea, and the Philippines²⁴.

Varying types of cover

Third-party insurance is currently more common in the US, while first-party cover is more popular in Europe, although that may change given the introduction of GDPR. Companies need both to ensure they are covered fully, although most claims historically have, and continue to be, first-party.

A cybersecurity plan that focuses on first-party coverage protects against losses such as:

- Stolen or damaged digital assets, such as data and software
- Lost business opportunities or increased costs due to cyber-attacks
- Extortion if hackers hold the insured digital assets for ransom
- Capital misappropriated as part of an electronic crime

Third-party coverage is generally geared towards companies that manage the software, networks or systems that hold the compromised data. These types of plans typically cover costs associated with:

- Breaches of employee confidentiality
- Loss of customer data and information
- Notifying customers after a security breach
- Media relations and attempts to combat intellectual property abuses

The scale and scope of cyber-attacks are dynamic and insurers continue to address the challenges of how to best calculate them. Coverage for intellectual property theft, reputational damage and business interruption are areas to which insurers have sought to provide solutions.

²³ <https://www.hiscox.co.uk/cyber-readiness-report/docs/cyber-readiness-report-2017.pdf>

²⁴ Bloomberg BNA, 2015. Privacy and Security Law Report.

4bn

The number of individual data breaches recorded in 2017

4. Emerging threats: cyber

A growing risk

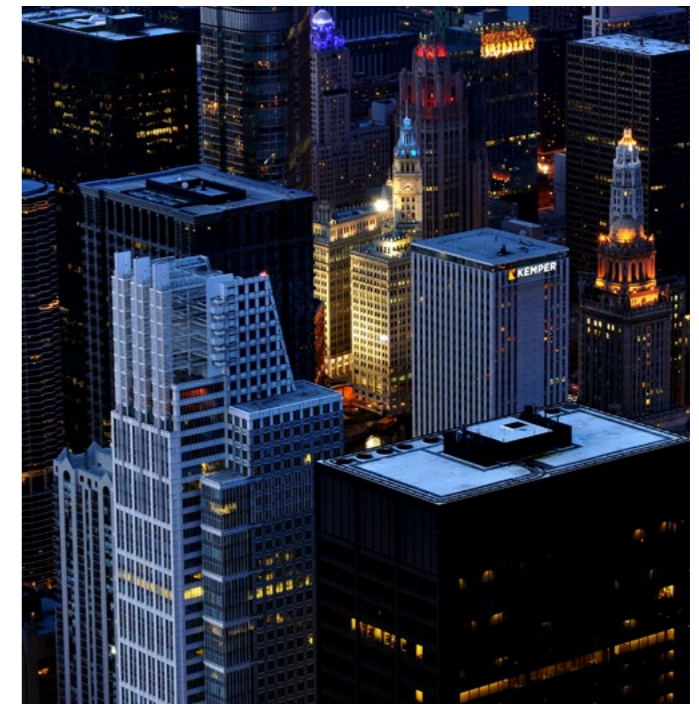
While insurance is not a substitute for a cybersecurity policy, it is an essential part of any organisation's disaster preparedness.

However, recent market data clearly reveals a lack of awareness, combined with an increase in the level of uninsured risk and the cost of cyber-attacks, is putting businesses at significant financial and reputational risk. For example, the number of individual data breaches reached close to four billion in 2017, by far the worst year on record. Further to this, a report by Deloitte states that many commercial enterprises have yet to purchase a cyber policy – or if they have, their coverage tends to leave them underinsured.

One way for businesses and government bodies to ensure their disaster readiness is to take a more active role in developing their understanding of the potential risks and impacts of cyber-attacks.

Organisations should undertake robust risk assessments to test the resilience of their systems. Using cyber-attack scenarios to see what impact attacks might have on their core business processes will help outline the actions needed to mitigate these.

In the UK, 46% of all businesses admitted to having at least one cybersecurity breach or attack over the year to January 2017. This figure rose to two-thirds for medium-sized firms (66%) and 68% for large firms.²⁶



²⁵ Friedman, S. and Thomas, A. 2017. Demystifying cybersecurity insurance [online]. Deloitte. Available at: <https://dupress.deloitte.com/dup-us-en/industry/financial-services/demystifying-cybersecurity-insurance.html>

²⁶ Cyber security breaches survey, 2017. Department for Culture, Media and Sport, Ipsos MORI, University of Portsmouth



Case study The Equifax data breach: the rising security threat

In 2017, the worst corporate data breach in US history occurred at Equifax, one of the country's largest credit bureaus. The personal and financial data of more than 147 million people²⁷ in the US, Canada and the UK was stolen²⁸, including Social Security numbers, dates of birth and home addresses.

Credit card numbers for 209,000 people and dispute documents with personal identifying information for 182,000 people were also stolen. The data breach has cost Equifax US\$87.5 million to date but total costs are expected to be far higher. The company's share price has still to recover to the levels seen before the hack.

Equifax experienced significant reputational damage because of its handling of the fallout. In the US, the data breach was the subject of a Senate hearing, and an investigation by the Consumer Financial Protection Bureau is ongoing. In the UK, Equifax has been called to answer questions by the Treasury Select Committee and is being investigated by the Financial Conduct Authority.

The fallout of the breach was exacerbated by two factors. Equifax only made details of the breach public several months after it occurred, and then had to make successive revisions to the numbers of consumers affected, repeatedly failing to reassure consumers and regulators of its competence to manage the issue. In addition, owing to Equifax's position as a credit bureau, the majority of individuals affected had never knowingly engaged with the company directly and had no choice or knowledge about Equifax processing their information.

Breach-related costs are now predicted to hit US\$439 million for Equifax, of which only US\$125 million will be covered by insurance³⁰. In addition, the company has had to invest US\$200m in data security infrastructure and remains the target of numerous lawsuits from consumers whose data was lost in the breach. The cost of the data breach³¹ to Equifax, both financially and reputationally, has been enormous.

The number of data breaches has increased by 27.4% year on year for companies located in developed economies and the cost of cybersecurity for companies now stands at an average US\$11.7 million. In order to protect their customers and their bottom lines, securing the appropriate level of cyber insurance is more important for companies than ever before.

Key facts

Estimated total cost of damage **US\$439m**

Amount covered by insurance **US\$125m**

Insurance gap **US\$314m**

²⁷ <https://www.reuters.com/article/us-equifax-cyber/equifax-discovers-another-2-4-million-customers-hit-by-data-breach-idUSKCN1GD5C7>

²⁸ <https://www.consumer.ftc.gov/blog/2017/09/equifax-data-breach-what-do>

²⁹ <https://www.insurancetimes.co.uk/cyber-saviours-insurers-paid-tens-of-millions-to-data-breach-firm-equifax-/1426989.article>

³⁰ <https://www.wired.com/story/equifax-security-overhaul-year-after-breach/>

³¹ <https://www.ft.com/content/56dae748-af79-11e7-8076-0a4bdda92ca2>

5. Conclusion

When Lloyd's and CEBR first assessed the insurance gap in 2012 it was in the context of a world only just emerging from deep recession. While some countries have continued to struggle in the five years since, many economies have bounced back and recovered to pre-crash levels.

It would be reasonable, therefore, to assume the insurance gap would have narrowed over the intervening period. While companies and governments tend to de-prioritise buying insurance in challenging times, they buy more in stronger economic climates. However, over the past six years the gap has narrowed by just 3%, an underwhelming \$5bn in global terms.

This would be a concerning trend in itself even were it not for a changing risk landscape. The general trend is for more severe, frequent, and costly natural disasters, driven in large part by climate change. Indeed, 2017 was one of the costliest years for natural catastrophes in the past decade. New threats such as cyber pose different risks to global economic growth.

Coupled with ongoing low levels of insurance penetration, these risks pose a substantial threat and cost to society. In the most extreme cases, uninsured businesses can suffer damage that bankrupts them and puts people out of work and uninsured infrastructure can take years for governments to repair or replace, slowing economic recovery.

Uninsured losses are paid from public funds, which disproportionately affects less wealthy economies, which do not have the funds available to recover post disaster. In this sense, catastrophes coupled with underinsurance can be seen as one of the significant factors that holds back economic development and perpetuates global inequality.

There are several factors holding back customers from buying more insurance and closing the insurance gap. There is a lack of understanding of the value of insurance; too often it is seen as a discretionary cost, a nice-to-have rather than a must-have. Even if customers see the value of insurance, in some cases they can't afford it. And sometimes the products available don't exactly meet the risk needs of the customer.

5. Conclusion

There is no one group that can close the insurance gap on its own. It requires action from all parties that have the expertise and tools to make a positive change.

For governments, this means collaborating with experts in the private sector to develop new insurance products that promote resilience. In less profitable or niche areas of insurance it might be that they need to sponsor and support pilot schemes. Governments also have the power to set policy and write law that encourages resilience and the uptake of insurance – in extreme cases requiring a certain level of cover. Developed nations can support emerging economies by offering insurance as aid (essentially buying insurance for developing nations to make them more resilient), providing expertise and knowledge in the application of insurance, and sharing best practice.

The insurance sector needs to work with policymakers to build functional products. Often this also means rival insurance businesses working together to share expertise and pool resources to create new solutions. This is why Lloyd's is part of The Centre for Global Disaster Protection – an alliance with the UK Government and other insurance experts such as RMS - which is developing prototype financial products to help manage risk in emerging economies as set out in this Lloyd's report.

Insurers must also help governments and businesses understand where underinsurance presents the greatest challenge and come up with the most appropriate ways of solving them. They need to make the case for insurance and the valuable role it can play in reducing risk pre-disaster and speeding up recovery after the event.

These kinds of public-private sector initiatives tend to take several years to conceive, develop and bring to market and for governments, introducing new laws and budgets can also take time. However, with natural disasters increasing in scale and impact, and a large insurance gap, progress must be made now to make the world more resilient. Underinsurance helps no one.