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#trending

Scott Adams, the cartoonist said, "Methods for predicting the future: 1) read horoscopes, tea leaves, tarot cards, or crystal balls . . . collectively known as "nutty methods;" 2) put well-researched facts into a sophisticated computer . . . commonly referred to as "a complete waste of time" ." I tend to agree. Science fiction films of the 20th century all had flying cars, but few predicted the smart phone. That said trends are interesting and provide some insight as to where things might go. I'm not talking about millennial trends that hashtag for two weeks and then disappear, but rather genuine plausible relationships between the objects of our attention which persist over time: decades, centuries and longer. A trend in this context is a general direction in which something is developing or changing. The purpose of this article is to explore some trends and ponder on what they could mean for the insurance industry. Our focus will be split between the following trending topics: #stuff; #mentalmatters; and #boom!

#stuff

The use of tools is not particular to humans. Chimpanzee stone hammers have been dated back 4,300 years¹. Birds use twigs, grass, feathers, and other objects to make and shape their homes. In my personal experience, elephants have used trees to take down electric fences to access water pipes. My favourite example is macaques, "Macaques living near a Buddhist shrine in Lopburi, Thailand, are known to pull out hair from visitors to use as floss to clean their mouths."² But amongst the animal kingdom I think it would be fair to say that humans have a particular fondness for tools – we just love our stuff!

The BBC released a fascinating 100-episode podcast called "A history of the world in 100 objects".³ If you enjoy history and have 20 minutes a day to spare (perhaps whilst driving) I highly recommend this podcast. The basic premise is that human history can be seen through a lens of the #stuff that we use. From early art and stone tools to credit cards - stuff defines us.

The trend in stuff is one of continued increase. Whilst our cave dwelling ancestors might have taken pride in their handful of objects: a stone axe; a single animal skin; a carved statue; and fancy wall paintings - the average American household had 300,000 items⁴ – back in 2014! The average American woman owns 30 outfits compared to just nine back in 1930⁵. It is not only the Americans by the way – the average British child owns 238 toys (but plays with only twelve on a regular basis⁶). The average Chinese household spent \$45 a year on toys, with a big city budget being up to ten times this amount⁷. The toy industry in China alone is expected to grow by around 11.1% per annum over the next five years⁸. Unfortunately for insurers, with a usage rate of around 5%, toys do not make a highly insurable market.

However, the trend of continuous growth holds true for more valuable assets. Consider the car. Worldwide the number of automobiles has increased from one for every 48 people in 1950 to around one for every twelve people in 1999⁹. The number of vehicles (including vans, buses, personal motor vehicles and commercial vehicles) ranges from a staggering 897 per 1000 in New Zealand to 1 per 1000 in North Korea. Whilst China is the largest vehicle market in the world, their ownership statistics are quite low at only 219 per 1000 people. Fairly close to South Africa's at 232.

¹ 10 Animals That Use Tools | Live Science <https://www.livescience.com/9761-10-animals-tools.html>

² 10 Animals That Use Tools | Live Science <https://www.livescience.com/9761-10-animals-tools.html>

³ BBC Radio 4 - A History of the World in 100 Objects <https://www.bbc.co.uk/programmes/b00nrt2d>

⁴ For many people, gathering possessions is just the stuff of life - Los Angeles Times (latimes.com) <https://www.latimes.com/health/la-xpm-2014-mar-21-la-he-keeping-stuff-20140322-story.html>

⁵ The Real Cost of Your Shopping Habits (forbes.com) <https://www.forbes.com/sites/emmajohnson/2015/01/15/the-real-cost-of-your-shopping-habits/?sh=57745fb71452>

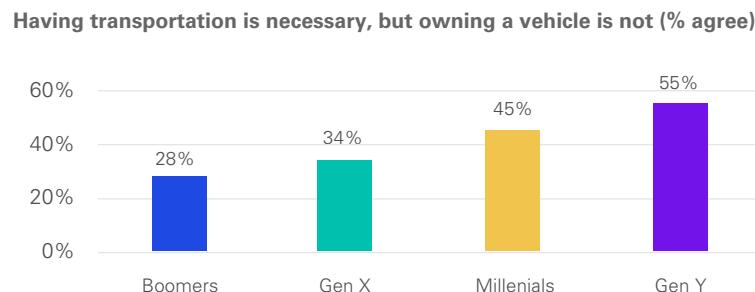
⁶ Ten-year-olds have £7,000 worth of toys but play with just £330 (telegraph.co.uk) <https://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/8074156/Ten-year-olds-have-7000-worth-of-toys-but-play-with-just-330.html>

⁷ China's toy market potential huge following 'second child policy' - CGTN <https://news.cgtn.com/news/2020-06-01/China-s-toy-market-potential-huge-following-second-child-policy-OYsMLVlghG/index.html>

⁸ China Toys Market Share, Growth, Trends & Forecast 2022-2027 (imarcgroup.com) <https://www.imarcgroup.com/china-toys-market>

⁹ Lomborg, Bjørn (2001). The Skeptical Environmentalist: Measuring the Real State of the World. Cambridge University Press. p. 79. ISBN 9780521010689.

Whilst the numbers have increased there are many other trends impacting this industry. Cox Automotive published an interesting article supporting a general view that car ownership is becoming less important over time. Their research and their graph below, suggest that younger generations see ownership as less important than access¹⁰. The advent of services like Uber and Lyft, as well as anecdotal evidence from conversations with our audit trainees, seem to support this. Interestingly, this concept is also being applied in the freight and commercial vehicle space with companies like Manbang in China – “described as the Chinese Uber for trucks”¹¹. Whilst this trend is not necessarily a problem for insurers as the vehicles still exist, the insured parties and the risk associated with the vehicles does however change.



Obviously COVID-19 has also impacted the personal automobile industry. However, at least two surveys we inspected suggest that the “intent to purchase a vehicle” metric is heading back to pre-COVID-19 levels (97% of pre-COVID-19 levels according to McKinsey)¹². The “intent to purchase” is a forward looking metric about expected consumer behaviour, but actual sales statistics show us what people are really doing. Actual worldwide motor vehicle sales growth has already rebounded to a 5% increase in 2021 following massive declines in 2020 due to nationwide lockdowns in many jurisdictions¹³.

Another impact of COVID-19 has been the increased emphasis on the usage-based insurance model. The usage-based model in vehicle insurance, also called pay-as-you-drive (PAYD) and like pay-how-you-drive (PHYD), brings modern telematics and information to help manage premiums. Many a braai-side conversation in the not-so-locked-down periods during the pandemic highlighted consumers’ concern about their insurance premiums in the context of a dormant, or largely idle vehicle. Metromile is an example of usage-based vehicle insurance from the US that launched in the COVID-19 period and has had some success over the period. The idea was trending enough that Metromile went

public in February of 2021 and was recently acquired by the well known Insurtech company Lemonade¹⁴. The availability of PAYD types of insurance, popularised by Discovery Insure, has become extensive, with many South African insurers now playing in this space.

However, in relation to stuff in general, the usage-based model of insurance has shown significant growth. If you only ski in winter, you turn on your ski insurance when you leave your house in Zurich for the alps and back off again when you park your car at home after the weekend. The same for bikes, cameras and other stuff.

Our stuff needs to come from somewhere. Getting it there remains primarily the role of the merchant fleet. The volume of goods loaded has increased from 4.8bn tons in 1996 to 11bn tons in 2020¹⁵ - a 46.5% increase. Only two years in that period showed negative growth, being 2009 and 2020; no doubt the credit crisis and COVID-19 respectively. That reflects an average annual growth in the volume of goods being shipped of 4.4%. That is a remarkable amount of stuff being moved around the world.

Clearly marine and transportation insurance will have benefitted from this growth. This is more than the gross domestic product (GDP) growth for the period which averaged 2.98% and has averaged 3.5% since 1960¹⁶. GDP growth has exceeded the average annual population growth rate of 1.58% since 1960. Admittedly, the industrial and agricultural components of GDP account for around 35% of GDP and the rest is services^{17 18}.

¹⁰ Shift from Ownership to Access Is Shaping the Future of Automotive - Cox Automotive Inc. ([coxautoinc.com/learning-center/2018-mobility-study/](https://www.coxautoinc.com/learning-center/2018-mobility-study/))

¹¹ The Station: COVID’s effect on car ownership | TechCrunch (<https://techcrunch.com/2020/11/30/the-station-covids-effect-on-car-ownership/>)

¹² How car buying and mobility is changing amid COVID-19 | McKinsey (<https://www.mckinsey.com/business-functions/growth-marketing-and-sales/our-insights/how-consumers-behavior-in-car-buying-and-mobility-changes-amid-covid-19>)

¹³ Worldwide motor vehicle sales growth | Statista (<https://www.statista.com/statistics/1097317/worldwide-motor-vehicle-sales-growth/>)

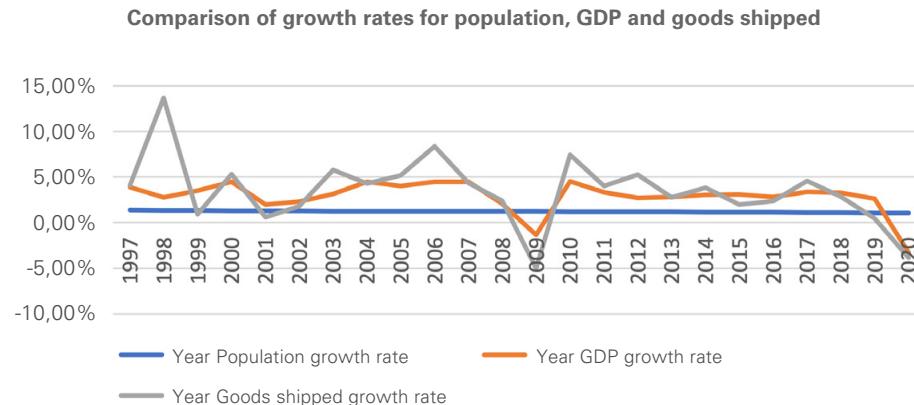
¹⁴ The Station: COVID’s effect on car ownership | TechCrunch (<https://techcrunch.com/2020/11/30/the-station-covids-effect-on-car-ownership/>)

¹⁵ World seaborne trade – UNCTAD Handbook of Statistics 2021 (<https://hbs.unctad.org/world-seaborne-trade/>)

¹⁶ <https://www.macrotrends.net/countries/WLD/world/gdp-growth-rate> >World GDP Growth Rate 1961-2022. (www.macrotrends.net). Retrieved 2022-08-07

¹⁷ List of countries by GDP sector composition - Wikipedia (https://en.wikipedia.org/wiki/List_of_countries_by_GDP_sector_composition)

¹⁸ What Percentage of the Global Economy Is the Financial Services Sector? (investopedia.com) (<https://www.investopedia.com/ask/answers/030515/what-percentage-global-economy-comprised-financial-services-sector.asp#:~:text=Global%20GDP%20is%20broken%20down%20into%20three%20sectors,services%2C%202025%25%20industry%2C%20and%203%25%20agriculture.%2010%20%EF%BB%BF>)



What does this mean for property insurers? Well, if the past is a good indicator of the future – then every year there will be more and more stuff to insure. Sounds like good news. However, there are two other trends that might undermine this rosy outlook.

#mentalmatters

We have all this stuff and more of it every year, but is our stuff making us any happier or more fulfilled? To try and answer this question, let us look at some trends in mental health.

I realise that equating unhappiness and mental health is spurious and overly simplifying a complex area; however, I would argue that a proportionate increase in depression, anxiety and suicide is a reasonable indicator of increased levels of dissatisfaction and unhappiness. It seems I am not alone. OurWorldInData suggests that: "Overall, evidence suggests that there is a negative correlation between prevalence of particular mental health disorders (depression and anxiety have been the most widely assessed) and self-reported life satisfaction." This suggests that life satisfaction and happiness tend to be lower in individuals experiencing particular mental health disorders.¹⁹

Mental health is of direct interest to life insurers as it can impact peoples' ability to work – leading to loss of income and income protection claims. Furthermore, mental health is associated with physical health and suicide, which increase mortality claims.

Prevalence of mental health is difficult to establish, and many researchers are at pains to point out the problems in most of the data on this topic. Mental health studies are significantly more frequent in developed and high-income countries which tend to have greater access to mental health professionals, leading to a bias in the underlying data. Active tracking and statistics related to mental health are also more recent phenomena, such that increasing rates cannot be distinguished meaningfully from increasing awareness leading to greater reporting.

The World Health Organisation (WHO) believes that as of 2019, "1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders the most common."²⁰ OurWorldInData puts the number at 13% with an in-country variance between 11% and 18%.²¹ The most common types are listed below, courtesy of OurWorldInData.Org. As explored on the next page, COVID-19 has significantly distorted the recent data and so we've stuck with 2017.

A primary measure of the impact of mental health is the Disability-Adjusted Life Years (DALYs), which measures the years of life lost, and years of life lived with a disability. The DALY measure is used to assess the global burden of disease in general, of which mental health is considered one of the primary disease burdens. The important distinction here is between a simple mortality measure, which considers the cause of death, and DALYs which consider both death and disability and the resultant loss of healthy years.

Whilst variously ranked based upon definitions "mental health and substance use disorders" tend to rank in the top five DALYs for most developed and high-income countries. This does not mean that developed countries have higher incidence of mental health, but rather that other causes of lost years, such as infant mortality, malaria, respiratory infections etc. are less impactful in developed countries. Cardiovascular diseases and cancers are the leading causes of both deaths and DALYs. From the table on the next page, it is notable that the DALY rate, the lost years due to mental illness, has declined for most categories except eating disorders. However, we are still losing more than 1250 years of productive life per 100,000 people due to mental illness.

¹⁹ Mental Health - Our World in Data <https://ourworldindata.org/mental-health#data-availability-on-mental-health>

²⁰ Institute of Health Metrics and Evaluation. Global Health Data Exchange (GHDx), (<https://vizhub.healthdata.org/gbd-results/>, accessed 14 May 2022).

²¹ Saloni Dattani, Hannah Ritchie and Max Roser (2021) - "Mental Health". Published online at OurWorldInData.org. Retrieved from: '<https://ourworldindata.org/mental-health>' [Online Resource]

Disorder	Share of global population with disorder (2017) [difference across countries]	Number of people with the disorder (2017)	Share of males: females with disorder (2017)	DALY (Disability-Adjusted Life Year) rates from disorders, measured as the number of DALYs per 100,000 individuals (age standardised) – {1990}; [2019]
Any mental health disorder	10.7%	792 million	9.3% males 11.9% females	
Depression	3.4% [2-6%]	264 million	2.7% males 4.1% females	{588.57} [577.75]
Anxiety disorders	3.8% [2.5-7%]	284 million	2.8% males 4.7% females	{360.55} [360.12]
Bipolar disorder	0.6% [0.3-1.2%]	46 million	0.55% males 0.65% females	{105.5} [105.43]
Eating disorders (clinical anorexia and bulimia)	0.2% [0.1-1%]	16 million	0.13% males 0.29% females	{32.15} [37.19]
Schizophrenia	0.3% [0.2-0.4%]	20 million	0.26% males 0.25% females	{185.19} [184.15]
Any mental or substance use disorder	13% [11-18%]	970 million	12.6% males 13.3% females	
Alcohol use disorder	1.4% [0.5-5%]	107 million	2% males 0.8% females	
Drug use disorder (excluding alcohol) ²²	0.9% [0.4-3.5%]	71 million	1.3% males 0.6% females	

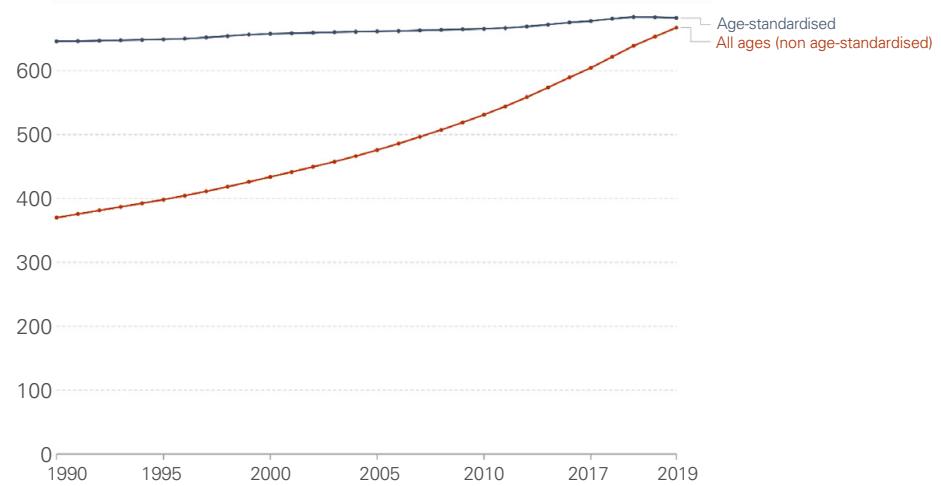
COVID-19 had a significant impact on the levels of reported mental illness. Initial estimates show a 26% and 28% increase respectively for anxiety and major depressive disorders in just one year²³. However, outside of the pandemic, various metrics seem to suggest that rates of mental illnesses have remained consistent over time and might even be reducing, taking the slight reduction in DALYs over time. "Except for age-related changes, we do not seem to have become more ill than the generation of our parents."²⁴ Age related matters distort the data. To illustrate this, consider the prevalence of Alzheimer's disease and other dementias. As the population structure changes and the proportion of older people increases, so the absolute number of individuals living with

Alzheimer's disease and other dementias has increased. However, within particular age groups the rates have only changed marginally over time.

Prevalence of Alzheimer disease and other dementias, World, 1990 to 2019

Our World in Data

Prevalence of Alzheimer disease and other dementias, measured as the prevalence per 100,000 people. This is shown as the rate across all ages (not age-standardised), and the age-standardised rate which assumes a constant population structure over time to adjust for impacts of population aging and changing age structure.



Source: IHME, Global Burden of Disease

CC BY

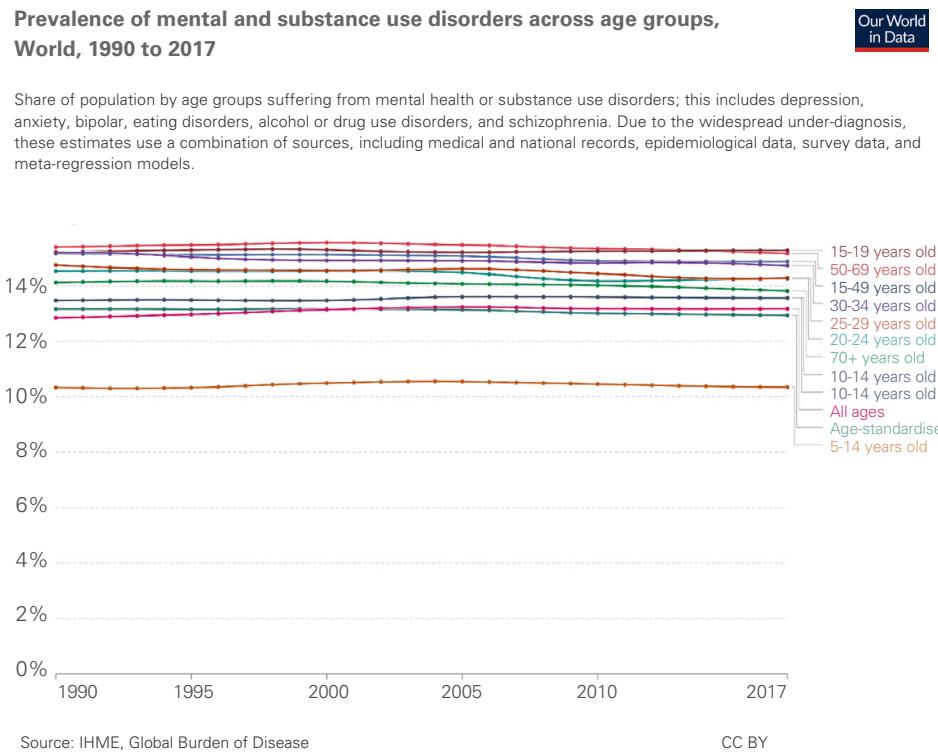
This is a problem for insurers with a stable but aging population group because, if this group remains in-force, the proportion of this group experiencing Alzheimer's or other dementias will continue to increase. The total proportion of the South African population with these illnesses (dementias) has increased from 271.61 per thousand in 1990 to 381.1 per thousand in 2019. In other words, as we live longer, so the proportion of the total population living with Alzheimer's and other dementias will continue to increase and consequently the loss of income from this will continue to increase.

²² If you want to understand the technical definitions of these illnesses a good place to start is the World Health Organisation's International Classification of Diseases, version 11 (ICD-11) definitions.

²³ Mental Health and COVID-19: Early evidence of the pandemic's impact. Geneva: World Health Organization; 2022. (https://www.who.int/publications/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022_1)

²⁴ Häfner H. Are mental disorders increasing over time? Psychopathology. 1985;18(2-3):66-81. doi: 10.1159/000284218. PMID: 4059492.

The stable prevalence trend seems to hold true for major categories of mental illness, when allowing for changing population structures and population growth:

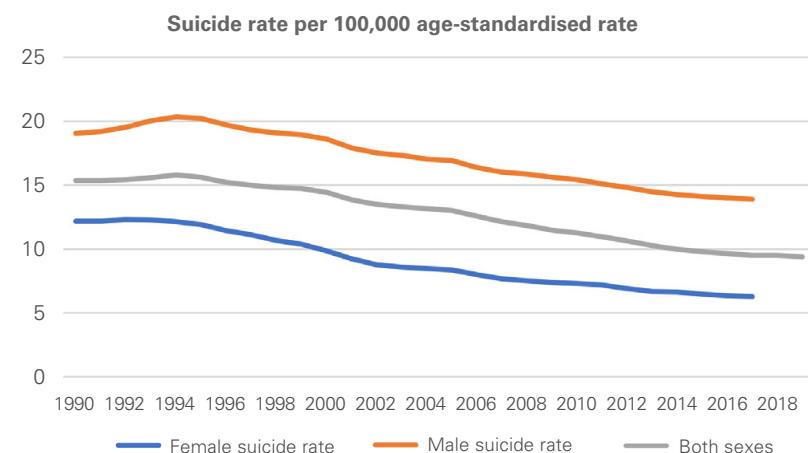


The "All ages" group has increased from 12.86% in 1990 to 13.17% in 2017, which is a 0.31% increase (or 2.4% on the base). On the face of it, not a huge increase, but an expected 2.4% increase in morbidity rates over the next 27 years is quite large. If we consider that the Solvency Assessment and Management shock is a 25% increase, this is approximately 10% of that.

Suicide rates are closely linked to mental illness. 98% of suicides are linked to individuals with a diagnosable mental illness²⁵. The rates vary quite significantly across the world as shown below:

Country group (Country) ²⁶	All	Male	Female
Africa	11.2	18.0	5.2
South Africa	23.5	37.9	9.8
Americas	9.0	14.2	4.1
South-East Asia	10.2	12.3	8.1
Europe	10.5	17.1	4.3
Eastern Mediterranean	6.4	9.2	3.5
Western Pacific	7.2	9.7	4.8
Global	9.0	12.6	5.4

Men are more likely to commit suicide in almost all jurisdictions. Whilst women are more prone to depression, anxiety and even suicidal thoughts, the statistics indicate that men are more likely to act on them. Suicide rates are not higher in high-income countries but rank higher as a cause of death (as above this is because in higher income countries infant mortality, malaria, respiratory illnesses are less likely to result in death). The figures are most likely under-reported due to cultural and religious taboos related to suicide. But it is not all doom and gloom. The worldwide suicide rate has declined by 38.9% from its 1990 base.



²⁵ Bertolote and Fleischmann (2002)

²⁶ List of countries by suicide rate - Wikipedia
https://en.wikipedia.org/wiki/List_of_countries_by_suicide_rate

It seems all our stuff is not making us notably happier or more fulfilled. Whilst Buddha, Jesus and Mohammed told us this centuries ago – it is sobering to see the statistics. Inversely, it is not necessarily making us any unhappier either. The jury is still out on this one.

What does all of this mean for life insurers? Mental health matters. The incidence and prevalence of mental health remains a significant contributor to loss of income, disabled years, and mortality rates. Understanding the causes of these illnesses as well as risk indicators will help insurers to price better but perhaps more importantly insurers stand to play an important role in helping manage the impact of these diseases by promoting cultural and personal lifestyle changes that can manage the incidence. Like other illnesses, we first need to acknowledge their existence, move away from superstitious and primitive causal models before we can manage and reduce their impact. Insurers and their agents are well positioned to participate in this journey.

#boom!

Well, that was heavy! And whilst the next topic is not a light-hearted one, you'll have to forgive me if I make light of a bad situation. The truth is that in a few years (measured in the context of our species) most of us will be living underwater, dying of thirst and carrying fire extinguishers. The world is on a dangerous trajectory and all our stuff is not helping! Floods, hurricanes, sea level rise, pollution, wildfires, over-population, and extinction. Just the kind of happy note I love to end on.

There is something captivating and terrifying about hurricanes. Freud might have attributed it to our death instinct, our innate and unconscious tendency toward self-annihilation²⁷. It appears that the rate of hurricanes is increasing as is their intensity. At least three sources support this view. According to Euan Mearns, the frequency of Atlantic Hurricanes has increased from 4.4 per annum in 1851 to 6.3 per annum today²⁸. Referring to major hurricanes (category 3,4,5), statista.com suggests that in the 1970s and 1980s there were on average 1.6 major hurricanes per year, by the 2000s and 2010s this had increased to between 3.1 and 3.8 per year²⁹. NEEF (the National Environmental and Education Fund) supports this view and states that: "from 1980-2018, tropical cyclones have caused the most damage, have the highest average event cost, and are responsible for more deaths than any other billion-dollar weather and climate disaster type in the US". 2020 saw the highest number of named storms in the Atlantic, with 30 named storms.

It was so bad that the usual list of names (21 in total) had to be supplemented with Greek alphabet names³⁰. Oh, and in 2020 there was COVID-19 – not a good year.

The trend also holds true in the South Indian Ocean although not for the North Pacific. "With 2 °C (3.6 °F) warming, a greater percentage (+13%) of tropical cyclones are expected to reach Category 4 and 5 strengths."³¹ The categories of hurricanes can be summarised as follows:

Category ³²	Description	Wind speed (kmph)	
		Low	High
Category 1	Very dangerous winds will produce some damage	119	153
Category 2	Extremely dangerous winds will cause extensive damage	154	177
Category 3	Devastating damage will occur	178	208
Category 4	Catastrophic damage will occur	209	251
Category 5	Catastrophic damage will occur ³³	252	

Luckily for us down in South Africa, the regularity of storms making landfall is limited. Only 25 of all the recorded South-West Indian Ocean tropical cyclones have made landfall. Three of those made it to South Africa (and Mozambique) – Dineo, Eloise and Gumba; and nine landed on Madagascar. However, all the severe ones occurred in the 2010s or 2020s with two out of three in 2021. If the trend is increasing, the limited data seems to suggest we are going to experience it.

For insurers this comes through in global reinsurance rates, where the cost of the Americas' hurricanes is funded through rate increases to the world. However, increased tropical storms will also come through in increased exposure in South Africa and our neighbours. This can be directly through wind damage or indirectly through increased rain and flooding.

²⁷ www.merriam-webster.com/dictionary/death%20instinct

²⁸ Atlantic Hurricane Trends and Mortality | Energy Matters (euanmearns.com)
<https://euanmearns.com/atlantic-hurricane-trends-and-mortality/>

²⁹ Chart: Number of Major Hurricanes Over Atlantic Rises | Statista
<https://www.statista.com/chart/11009/hurricanes-over-the-atlantic-basin/>

³⁰ The Latest Hurricane Statistics for 2022 (US) - PolicyAdvice <https://policyadvice.net/insurance/insights/hurricane-statistics/>

³¹ Knutson, Thomas; Camargo, Suzana J.; Chan, Johnny C. L.; Emanuel, Kerry; Ho, Chang-Hoi; Kossin, James; Mohapatra, Mrutyunjay; Satoh, Masaki; Sugi, Masato; Walsh, Kevin; Wu, Liguang (August 6, 2019). "Tropical Cyclones and Climate Change Assessment: Part II. Projected Response to Anthropogenic Warming". Bulletin of the American Meteorological Society. (<https://journals.ametsoc.org/view/journals/bams/101/3/bams-d-18-0194.1.xml>)

³² Hurricane Categories: What Categories 1, 2, 3, 4, 5, 6 Mean | Time <https://time.com/4946730/hurricane-categories/>

³³ Seems there is nothing more damaging than catastrophic damage

Speaking of flooding, floods are the most common type of natural disaster in the last 20 years. Forty seven percent of natural disasters worldwide are floods and account for 43.5% of deaths from natural disasters. Low-income countries (predominantly located in sub-Saharan Africa) carry more than 75% of the death burden³⁴. One only needs to consider the recent floods in South Africa to know that this is a problem that is close to home. Furthermore, the WHO believe that "floods are also increasing in frequency and intensity, and the frequency and intensity of extreme precipitation is expected to continue to increase due to climate change."³⁵

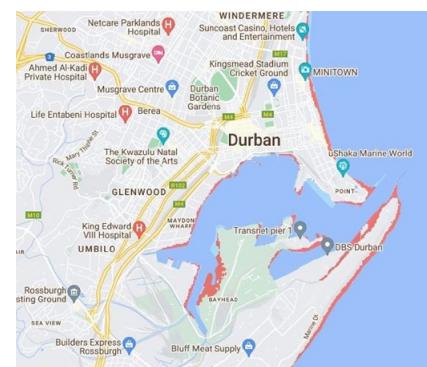
Flooding is caused by various factors, but the most obvious are heavy rainfall, storm surges and dam bursts. Dam failures are usually associated with heavy rainfall, but most are also associated with poor construction or maintenance³⁶. It is not inconceivable that these two factors will converge in South Africa, with the poor rates of maintenance and increased incidence of flooding. It is also a well-established fact that increased urbanisation leads to greater and more frequent flooding³⁷. The run-off from rain is not absorbed into the earth, but rather channelled into specific outlets and rivers. "As a result, the peak discharge, volume, and frequency of floods increase in nearby streams."³⁸

Insurers need to start considering (if not doing so already) the risk of flooding in the pricing and underwriting models they use. The risk of flooding will continue to increase due to increased exposure to severe storms, increased intensity of rainfall, and urbanisation. Proximity to rivers and dams are factors that can be easily assessed. In commercial and agricultural insurance, existing techniques of flood risk assessment, can help manage and mitigate the risks. However, a broader responsibility rests with the public to ensure that government and construction companies are planning appropriately and maintaining existing infrastructure to reduce these risks.

A lot of this is irrelevant if you are underwater due to sea-level rise. Like mental health, Hollywood has taken some liberties in their portrayal of climate change in general and sea-level risk in particular – perhaps more appropriately as nobody really takes disaster movies seriously. Most studies on sea-level rise seem to suggest a base line increase of over 50cm by the end of the century, with some going as high as 2m^{39 40}. So not Waterworld, but unpleasant. To make sense of this consider the graphics to the right presenting some serious outcomes for Durban and Cape Town⁴¹. The first two maps represent the more comprehensive but less certain view from an Intergovernmental Panel on Climate Change (IPCC) 2021 study. These maps show an unchecked pollution scenario with bad luck (which means that the interactions between various factors are all negative and we are in the 95th percentile "worst-case" scenario)⁴².



Whilst the previous two images represent a "worst-case" scenario the current best consensus is not nearly this severe. According to the IPCC 2021 best consensus study, with moderate pollution cuts and a bit of luck (at the 50th percentile) by 2100 the scenario is less dramatic:



³⁴ Epidemiology of floods in sub-Saharan Africa: a systematic review of health outcomes | BMC Public Health | Full Text (biomedcentral.com) (https://bmccph.biomedcentral.com/articles/10.1186/s12889-022-12584_4#:~:text=Flooding%20has%20been%20the%20most%20common%20type%20of,from%20natural%20disasters%20in%202019%20%5B%202%20%5D.)

³⁵ Floods (who.int) https://www.who.int/health-topics/floods/#tab=tab_1

³⁶ The Deadliest Dam Failures In History - WorldAtlas <https://www.worldatlas.com/articles/the-deadliest-dam-failures-in-history.html>

³⁷ How does a urbanization increases flooding? – Short-Fact <https://short-fact.com/how-does-a-urbanization-increases-flooding/>

³⁸ www.pubs.usgs.gov/

³⁹ South Africa - Sea Level Rise | Climate Change Knowledge Portal (worldbank.org) <https://climateknowledgeportal.worldbank.org/country/south-africa/impacts-sea-level-rise>

⁴⁰ How rising sea-levels may impact Durban and Cape Town (dailymaverick.co.za) <https://www.dailymaverick.co.za/article/2021-10-24-how-to-navigate-the-rising-sea-levels/>

⁴¹ Climate Central | Comparison: long-term sea level outcomes <https://coastal.climatecentral.org/map/>

⁴² Climate Central; <https://www.climatecentral.org/>

What is apparent in all scenarios is that the ports that bring in all our stuff are under serious threat. Even in the current consensus scenario, with moderate management of pollution and a bit of luck, piers and wharfs will be flooded by rising sea levels. This would be exacerbated by storm surges and spring tides. The solution from a purely commercial perspective is to start using these and other models to start informing pricing of long-term asset insurance. However, the first movers in this scenario would potentially price themselves out of the market because these risks will only materialise 50 to 100 years into the future.

So, we all move inland to avoid getting flooded and are safe? Unfortunately, not. The United Nations Environment Program suggests that the frequency of severe wildfires will increase between 31% and 57% by the end of the century⁴³. The incidence of wildfires is not entirely attributable to climate change - various other factors including poor fire safety management, a lack of firebreaks, non-compliance with existing legislation and simple negligence all play a role. Whilst the news focus tends to be on fires in commercial and urban areas (Cape Town and St. Francis Bay), the impact on farming is extensive. The loss of farmland, livestock, infrastructure and lives is significant and continues unabated. In recent news we have had fires in most provinces of South Africa – the Eastern Cape, Mpumalanga, the Free State, Gauteng, the Northern Cape and the Western Cape. In 2021 fires destroyed 3.2 million hectares of land in South Africa⁴⁴. That is around 2.6% of the country burnt in one year.

Fires are more controllable than hurricanes and sea level rise. Good fire management practice can reduce the incidence, if not eliminate it. With a probability of increasing incidence and severity of wildfires, strict adherence by policyholders to risk management practices becomes more important and enforcing these is clearly beneficial to the public at large. Once again, insurers have an important role to play in how these issues are managed and controlled.

#SoWhat?

I hope you survived my hurricane of doom, gloom and statistics. We have seen many trends, many of which are supported by solid statistical evidence. Whilst our consumption of goods seems to be on an inexorable rise, the cost seems to be coming through in rising levels of disasters. The statistics are hard to ignore. Thrown into this mix are complications from people living longer and the prevalence of mental illness. It is equally clear that insurers can play an important role in managing these challenges. The natural feedback loop of pricing and risk management is a tool that can be utilised to encourage good behaviours that have benefits beyond simply containing loss ratios. Educating policyholders on the good practices they can engage in to manage risks and incentivising them for doing so is a practice that has been part of the insurance industry for years, but is more important than ever in the current world. The levels of uncertainty are high, but for an industry built on managing uncertainty this is the time for insurance to shine.

⁴³ United Nations Environment Programme (2022). Spreading like Wildfire – The Rising Threat of Extraordinary Landscape Fires. A UNEP Rapid Response Assessment. Nairobi. (<https://www.unep.org/resources/report/spreading-wildfire-rising-threat-extraordinary-landscape-fires>)

⁴⁴ The burning season: Wildfires sweeping across South Afr... (dailymaverick.co.za) <https://www.dailymaverick.co.za/article/2021-10-04-the-burning-season-wildfires-sweeping-across-south-africa-and-namibia-have-left-devastation-in-their-wake/>



