

TIMES ARE **A-CHANGIN'**

Key takeaways

Megatrends - higher inflation, low investment yields, climate change, elevated catastrophe loss activity and fluid cyber threats - are making the risk landscape more challenging to predict.

Healthy capitalisation...

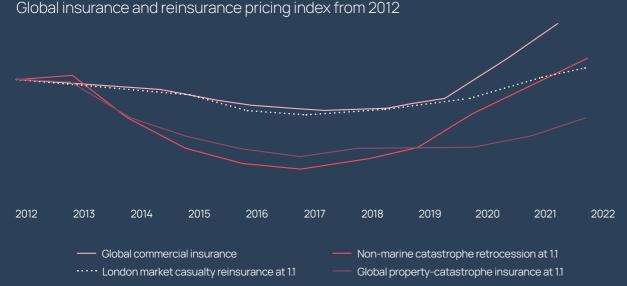
S26bn \$421bn dedicated reinsurance capital at YE2021

...puts the sector in a strong position to deal with structural changes to the loss environment

Climate: average insured losses by 5-year period \$100bn \$80bn \$60bn \$40bn \$20bn \$0bn 2012-16 2017-21 Source: NOVA

of risk across the (re)insurance market

Pricing is being driven by perceived levels



1 January 2022 reinsurance renewals

+9%

Global propertycatastrophe

Biggest year-on-year increase at 1.1 since 2009 +15%

Retrocession

Cumulative increase of 75% since 2017

+5%

130

120

100

90

70

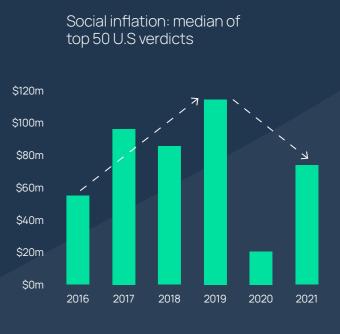
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London market casualty

Degree of moderation from 1 January 2021

Clients are looking to the (re)insurance sector to innovate, advise and offer sufficient capacity during one of the most significant periods of change in living memory. Howden is leading the charge by providing best-in-class analytics and risk transfer advice to support clients in managing market change.

of new capital entered the market in 2020/21



Source: Verdict Search

Times are a-changin'

01

This time last year, Howden opened its inaugural (re)insurance market report, Hard Times, by describing the 'sweeping shock' inflicted on the sector by a confluence of factors including a global pandemic, geopolitical tensions, uncertain equity and bond markets, more frequent natural catastrophes and growing concerns about climate change.

Elements of the shock have dissipated in the intervening 12 months, but many of its effects still linger. Throw into the mix rising inflation, supply chain disruptions, a dislocated cyber market, higher reinsurance costs, yet more extreme (and unusual) weather events, less confidence in catastrophe models, and the operating environment is just as challenged at the start of 2022.

Growing climate change concerns ~\$100bn average annual catastrophe loss since 2017

Economic and social inflation

Highly dynamic cyber risk landscape

COVID-19: third largest (re)insured loss ever

Low interest rates

Regulatory risks

 Higher cost of reinsurance / retrocession

 Rising pricing
 Tighter terms and conditions
Lingering COVID frequency benefits
 Strong capitalisation
Economic growth
Premium growth (volume and pricing)
Strong demand for (re)insurance
New solutions / growth opportunities

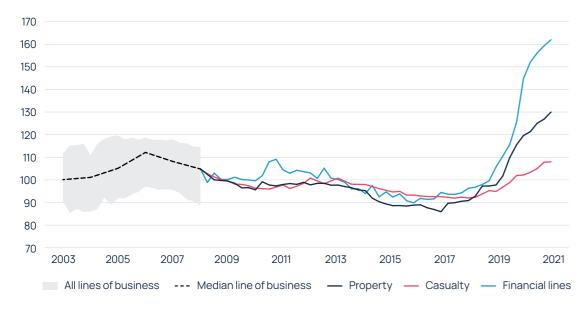
Commercial insurance market

The primary commercial market has responded to this fluid risk landscape with higher prices, programme restructuring and generally cautious capacity deployment. Strong capitalisation continues to provide some relief: this is not a synchronised hard market where all boats are lifted equally, but one that is more discerning and reflects the performance and profitability of each programme or risk.

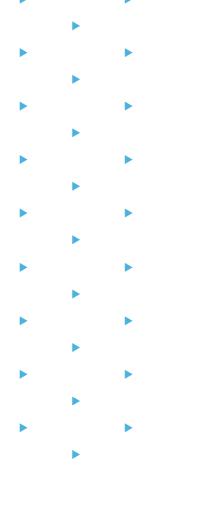
There were signs of let-up in 2021, as some of the more acute price rises moderated in the first half of the year, with cyber the standout exception. Rate movements have since ebbed and flowed, with pressure points emerging in areas subject to rising inflation and sizeable losses (e.g. property-catastrophe).

This reflects market conditions confronting businesses currently. Frustration is now setting in for buyers subjected to multiple years of price rises, especially those who have improved risk profiles by de-risking and elevating risk management.

Figure 1: Global commercial insurance pricing index - 2003 to 9M21 (Source: NOVA)







The result was a premium-weighted, global commercial insurance rate rise of 12% in 2021, versus 16% in 2020, with virtually all areas continuing to achieve rate-on-rate (compounded) gains (see Figure 1). Howden data show global commercial insurance prices have now risen for 14 consecutive quarters. Classes with the highest rate increases last year included cyber, property and professional indemnity whilst premiums for worker's compensation were subjected to less pressure and even declined in certain regions.

Tight market conditions continue to be a product of checked risk appetite (itself a reaction initially to weak results and earnings volatility) rather than capital constraints. After successive years of rate rises, underwriting sentiment is now being held back by fear of 'known unknowns' such as climate change, economic inflation, social inflation - a catch-all term that includes high court verdicts, growing anticorporate sentiment and litigation funding - and uncertain post-COVID claims development.

Different strategies are being pursued during this phase of the market cycle: whilst most carriers continue to move cautiously in areas not deemed to meet price adequacy, others are deploying capital aggressively to leverage the firming pricing environment.

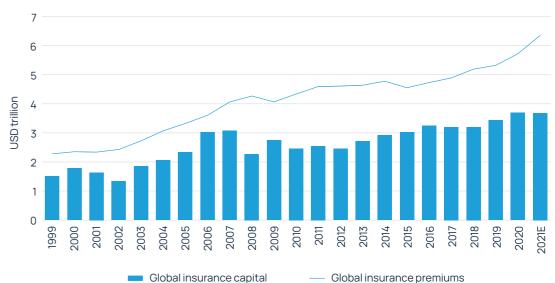
Capital matters

The resilience of insurance capital is all the more remarkable when considering the impacts of COVID-19 and the near USD 500 billion aggregated insured catastrophe losses since 2017. Balance sheets have been supported by higher asset values - interrupted briefly by COVID-19 but quickly recovered following substantial fiscal and monetary stimulus - as well as new capital inflows. In the 18 months following the initial COVID lockdowns, more than USD 26 billion of new insurance and reinsurance capital was raised by new and existing players. Most of this capital entered the market in 2020, with more modest inflows in 2021.

Figure 2 shows that insurance capital is currently at record levels, with premiums also rising on the back of higher pricing and heightened risk awareness.

Figure 2: Global insurance capital and premium (all lines) - 1999 to 2021

(Source: Howden Analytics, Swiss Re, World Bank)



This market turn has defied the historical rulebook: firming in the primary market has outstripped capital flight. Despite the landscape remaining undeniably difficult, and the potential of structural inflation now a clear threat, this remains a well-capitalised market where differentiated risk management strategies and advice can still unlock access to capacity.

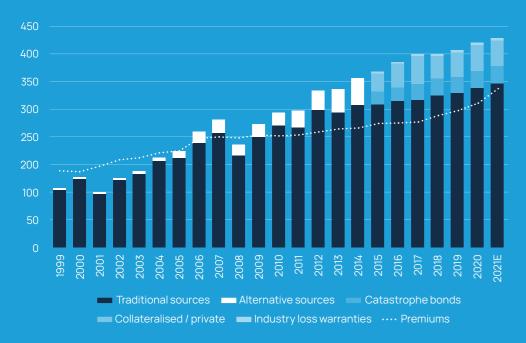
Reinsurance renewals

Reinsurance renewal outcomes at 1 January 2022 were shaped against this backdrop. Macroeconomic and sector trends had a tangible effect on supply and demand dynamics in more challenged areas, with some buyers seeking to secure additional coverage in response to an increasingly adverse environment, not least in Europe which had become accustomed to relatively benign loss activity. Capital providers' deployment appetite, meanwhile, was moderated by requirements around structure, terms and price, along with a desire to control volatility.

Reduced flows of capital into the sector in the lead up to renewal, along with rating agencies' and regulators' increasingly vocal interventions on the rising frequency and severity of catastrophe events, strengthened reinsurers' resolve to hold ground on loss-affected business and demand higher returns. The result was a late property renewal, with rate changes typically up year-on-year and capacity down for lower-layers or aggregate products as reinsurers and retrocessionaires moved away from frequency covers. Given the characteristics of events in 2021, the reinsurance market absorbed a sizeable portion of losses.

Casualty renewals were more stable, with improving underlying profitability reflected by ample capacity. Reinsurers' appetite for profitable proportional business led to upward pressure on ceding commissions, compounded by some cedents' desire to retain more business.

Figure 3: Dedicated reinsurance capital and global gross reinsurance premiums (all lines) - 1999 to 2021 (Source: NOVA)





Strong capitalisation helped to cap the degree of firming at 1 January 2022. Figure 3 shows dedicated reinsurance capital rose marginally to USD 421 billion last year, led both by record catastrophe bond issuance and growth in traditional capital at the margin. Some of this was offset by a sizeable portion of trapped capital in the collateralised market, where investor fatigue from the five-year run of sizeable losses prevented reloading on the scale seen in previous years. This had a meaningful impact on capacity availability in catastrophe-exposed areas, as acute pressures in the retrocession market

COVID was less of a factor during renewals this year. Improved visibility on losses, which are developing favourably relative to early industry expectations, have helped progress claims disputes. As a result, cedents and markets were willing to look through any unresolved issues and close transactions at 1 January 2022. With communicable disease and silent cyber exclusions largely addressed during last year's renewal cycle, terms were broadly stable in 2022.

Global Direct and Facultative

Renewal outcomes in the global direct and facultative (D&F) market at 1 January 2022 were driven by a host of factors that included strong demand and abundant supply relative to the retrocession market. As a result, rates for global D&F catastrophe programmes rose by an average of 7.5% on a risk-adjusted basis at 1 January 2022 (see Figure 4), although there were significant variances around this figure. Cedents with higher attachment points that hit lower layers only typically saw more favourable pricing outcomes, whilst losses which impacted higher layers often translated into more substantial price

From an underwriting perspective, the underlying business continues to offer pockets of opportunity expansion. From a purchasing perspective, the attractiveness of D&F excess-of-loss pricing relative to retrocession, and the continued reduction of combined D&F and retrocession layers, is fuelling demand. This increase in demand is being absorbed mostly by rated carriers which operate in the D&F market, compared to the more ILS-centric retrocession market.

Facultative Rate-on-Line Index - 1992 to 2022 (Source: NOVA)

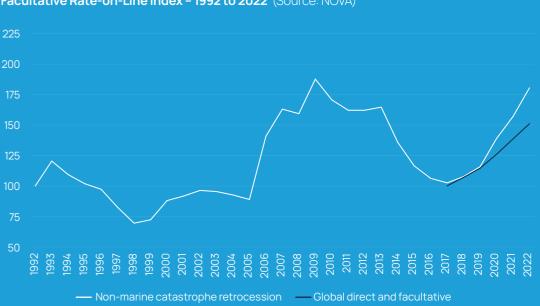


Figure 4: Howden Risk-Adjusted Non-marine Retrocession Catastrophe and Global Direct and

Retrocession

Trapped ILS capital and another year of large loss events, characterised by secondary perils that started with winter storm Uri in January 2021 and ended with the Mid-West tornado outbreak in December, created a difficult retrocession renewal at 1 January 2022.

Risk-adjusted retrocession catastrophe excess-of-loss rates-on-line rose by 15% on average¹ (see Figure 4 on page 9), with aggregate covers (where available) seeing sharp increases. Double-digit outcomes were also recorded for some loss-affected occurrence covers. After five successive years of price increases, the cost of retrocession protection is now approaching levels last seen in 2009. This equates to an average increase of more than 75% since 2017.

Unlike in previous years, there was no late wave of capital replenishment to offset pressures. Uncertainty over loss development for major losses, in addition to pre-existing investor frustration following successive years of lacklustre performance, weighed heavily during fundraising discussions and ultimately reduced capacity availability at renewal. Climate change, and the attendant issue of catastrophe model efficacy, were also decisive factors this year, with the unusual mix of secondary events fuelling sentiment that changing weather patterns are now increasing both the frequency and severity of climate-sensitive perils.

Whilst the catastrophe bond market, which typically writes more remote risk, has emerged relatively unscathed from the sizeable losses of the last five years, and continues to offer cost efficient protection despite notable tightening in late 2021, collateralised quota share and sidecar vehicles suffered significant impairments.

Capacity dedicated to earnings protection was scarce at 1 January 2022 as a result, after the combination of Uri, the European floods and Hurricane Ida eroded a large portion of aggregate limit placed. The European floods and Ida also triggered some occurrence losses, although these were mostly restricted to lower layers. The late tornado outbreak in the U.S. complicated matters, not only from a timing perspective, but also by straining further already depleted aggregate covers, trapping more capital and adding to reinsurers' concerns about price adequacy for secondary perils.

Confronted by constrained capacity for proportional and aggregate covers, along with flat budgets, some retrocession buyers were forced to restructure programmes or explore alternative solutions.

Strategies included retaining more risk, moving from aggregate to occurrence covers, raising attachment points, narrowing coverage or accessing the catastrophe bond market. All of which had implications for property-catastrophe reinsurance supply.

Property-catastrophe reinsurance

Late retrocession placements meant that propertycatastrophe carriers had less clarity than usual around their net positions when offering renewal lines on their 1 January portfolios. This, alongside Standard & Poor's updated catastrophe charge methodology, is likely to see continued purchasing interest into 2022 and the North Atlantic hurricane season.

Figure 5 shows that risk-adjusted, global propertycatastrophe reinsurance rates-on-line rose by an average of 9% at 1 January 2022.¹ This was higher than the 6% recorded last year, and the biggest year-on-year increase since 2009, taking the index back to pricing levels last recorded in 2014.

2021 was another active catastrophe year, with the USD 100 billion loss threshold breached for only the fourth time on record (see Figure 6). With insured losses since 2017 now approaching USD 500 billion in aggregate - driven by the effects of climate change, higher asset values and rising loss settlements due to higher construction / labour costs, as well as infrastructure vulnerabilities - concomitant portfolio remediation around lower layers especially created capacity constraints for buyers that were only offset partially by markets in growth mode.

Given the higher weighting of European programmes up for renewal at 1 January, loss experience in the region was a key inflating factor this year. Not only did the floods and storms in Germany and surrounding countries elevate losses in the region beyond previous highs, they also served as a reminder of the level of risk in parts of Europe following years of benign loss activity and price reductions. Pressures were less acute in unaffected countries, where pricing was flat to up modestly.

> ¹ This is a point estimate within ranges depending on loss experience, exposure and other clientspecific conditions and masks pockets of significant challenge for certain risks.

- 1992 to 2022 (Source: NOVA)





A desire from capital capacity providers to achieve perceived pricing adequacy for lower-attaching perils led to more disciplined underwriting and higher attachment points across a number of programmes in Europe. Fears and expectations that these types of events will become more frequent as a result of climate change saw aggregate capacity shrink, with per event capacity more widely available. Programmes in loss-affected territories typically saw double-digit increases overall on a riskadjusted basis, with significant changes to structures that included higher deductibles and a shift towards occurrence cover.

Renewals were also challenged in North America, but with pricing coming off a higher base, the average rate-on-line increase was capped at 6.5%. Outcomes here reflected one of the

Figure 5: Howden Global Risk-Adjusted Property-Catastrophe Rate-on-Line Index

Figure 6: Global insured catastrophe losses by quarter - 2012 to 2021 (Source: NOVA)

largest hurricane losses ever, after Hurricane Ida made landfall in Louisiana and forced some local carriers into receivership. Winter storm Uri added to the frequency and severity of events in the U.S., triggering a loss that was more expensive than any other freeze event, whilst the devastation brought by the Quad State tornado outbreak unusually late in the year caused one of the most costly severe convective storm losses on record.

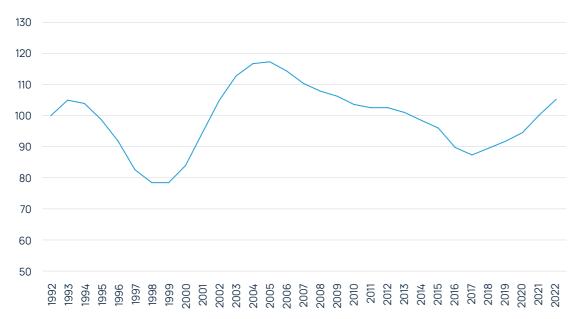
Differentiation was a key feature of U.S. renewals. Lower layers exposed to the frequency of midsized losses saw significant pricing pressure and restructuring (higher attachment points) to reflect the loss dynamics of recent years. Less acute tensions for higher layers helped cap overall risk-adjusted rate increases to midsingle-digits.

Casualty reinsurance

Ample capacity, fed by higher rates and improved profitability on original business, provided a more constructive backdrop for casualty reinsurance renewals at 1 January 2022. Strong competition, combined with additional, if temporary, COVID-related frequency tailwinds such as closed courts, reduced driving (albeit with high severity) and less workplace accidents, prevailed over any threat posed by inflation (social or economic) in what remains a historically low interest rate environment.

London market casualty reinsurance rates-on-line, including adjustments for exposure changes and ceding commissions, rose by 5%¹ on average at 1 January 2022 (see Figure 7). This presented a degree of moderation from last year, when the corresponding data point was 6%, and reflected strong reinsurer appetite to access profitable underlying portfolios that have undergone stringent remediation (e.g. tighter terms and reduced limits) and continue to benefit from compounded price increases.

Figure 7: Howden London Market Casualty Risk-Adjusted Reinsurance Rate-on-Line Index - 1992 to 2022 (Source: NOVA)



High levels of competition for proportional business, combined with cedents' willingness to retain more net, pushed up ceding commissions across several accounts at 1 January 2022, with the range of outcomes influenced by portfolio performance. Improved or outperforming accounts were rewarded with higher commissions (often in range of two to three points) whilst those that have not performed so well saw less favourable outcomes comparatively.

Ultimately, supply and demand dynamics prevailed, with certain cedents able to point to reduced limits and / or exposures following underwriting actions, as well as plentiful supply from reinsurers keen to tap into improved economics derived from higher underlying rate increases.

Reinsurers were more successful in pursuing higher pricing for excess-of-loss programmes, especially where experience deterioration was acute, with outcomes building on those recorded in 2021. Where portfolio remediation and compound rate increases could be demonstrated, rates were largely risk adjusted flat to down, with reinsurers weighing cedents' disposition to increase retentions if pricing demands were considered to be excessive.

Rising to the (systemic) challenge

Heightened risk volatility has been a rare constant through two years of perpetual change. The lives of billions of people have been upended by COVID-19, a global health crisis that brought with it shutdowns, financial market turbulence, an economic shock (and then record recovery) and civil unrest.

Some of the challenges raised by the pandemic apply equally to the two other large, systemic risks of our time: climate change and cyber risk. Both are highly complex; both fail to conform to traditional assumptions around correlations, boundaries or duration; both require interventions that often transcend traditional (re)insurance solutions and both came to a head in 2021 (more on this shortly)

The insurance market nevertheless confronts these challenges from a position of strength. The value and importance of risk transfer comes to the fore during times of volatility: the sector is playing a crucial role in shoring up economic resilience by paying claims, incentivising mitigation and adaptation, and continuing to underwrite complex risks.

This is the playbook to follow after the reputational hit taken by the sector from COVID. Whilst conditions unquestionably remain difficult, and will likely extend into 2022 for certain classes of business, this is still a well-functioning market overall. It is incumbent on all stakeholders - brokers and risk carriers alike - to apply their intellectual and financial capital to create products for new risks, and to seize the opportunity to secure long-term relevance.

Howden is at the forefront of these efforts. We have a deep understanding of market dynamics and are renowned for delivering pioneering solutions that push the boundaries of insurability. With high levels of uncertainty pervading the market, and the risk landscape changing like never before, insurance and reinsurance buyers require detailed insights and analysis into key drivers. Howden is leading this charge by providing best-in-class analytics and risk transfer advice to support clients in managing market change.

HOWDEN IS LEADING THE RISK TRANSFER ADVICE TO SUPPORT CLIENTS IN

CHARGE BY PROVIDING BEST-**IN-CLASS ANALYTICS AND** MANAGING MARKET CHANGE.

2021: a tale of recovery

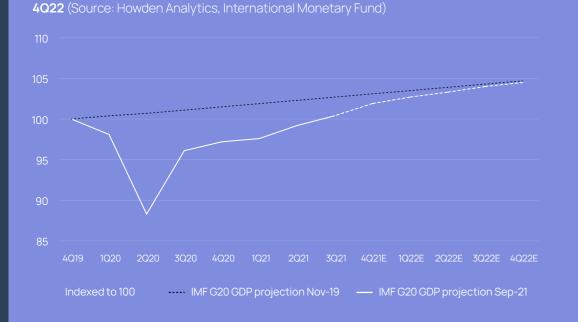
2021 was in many respects a period of recovery from COVID-19. A year that began with concerted efforts to revive economic activity ended with rising inflation from pent-up demand and a global supply shock. Post-financial crisis austerity has been replaced by soaring spending to the point where supply chain bottlenecks and shortages for labour and goods are now the biggest barriers to economic growth. Heading into 2022, inflation and tighter monetary policy have replaced COVID as the market's pre-eminent macro concerns.

The pace of the economic upturn in 2021 exceeded expectations, with output surpassing pre-COVID levels in several advanced economies. The Omicron variant is nevertheless a sombre reminder that the pandemic remains an ongoing health crisis, and that virus mutations and insufficient vaccination levels are likely to impact lives and livelihoods globally for some time to come. POST-FINANCIAL CRISIS AUSTERITY HAS BEEN REPLACED BY SOARING SPENDING TO THE POINT WHERE SUPPLY CHAIN BOTTLENECKS AND SHORTAGES FOR LABOUR AND GOODS ARE NOW THE BIGGEST BARRIERS TO ECONOMIC GROWTH: INFLATION AND TIGHTER MONETARY POLICY **ARE THE MARKET'S** PRE-EMINENT MACRO **CONCERNS HEADING** INTO 2022.

Recovering from COVID

2021, economies have continued to recover to the point where global GDP surpassed

Figure 8: G20 recorded / projected GDP vs pre-COVID underlying trend - Q419 to



The improved economic outlook saw equity markets continue to rally in 2021. Of all the

large (mostly technology) companies. During the two months leading up to the end of the year, over 75% of S&P 500 listed-companies' shares traded below their 52-week highs, on

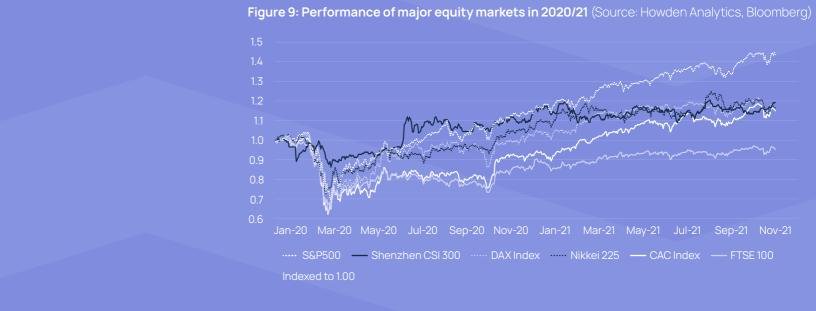
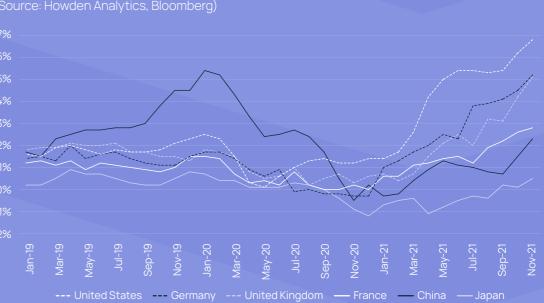


Figure 10: CPI inflation change year-on-year - 1Q19 to 4Q21



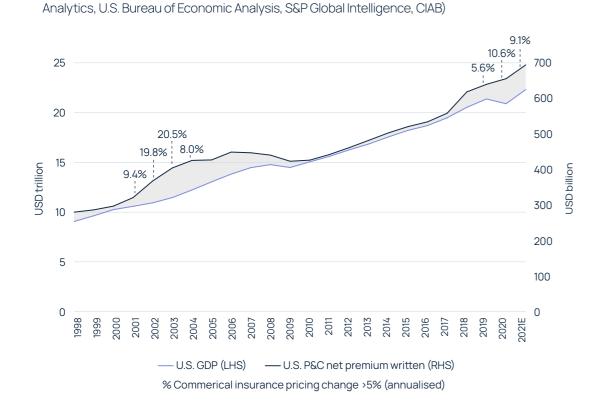
commodities to food, furniture, cars, microchips and shipping costs. This, along with the speed of

below 1%). CPI in the United States increased to 6.8% in November, the highest level in nearly 40

Top line tailwinds

This macroeconomic backdrop - a strong, but uneven economic recovery, rising prices and historically low interest rates - has important implications for the (re)insurance market. The sector overall continues to benefit from above-trend premium growth, despite the deep recession caused by COVID. Cyclical and structural factors, including significant rate increases and a changing risk landscape, are propelling P&C premium growth ahead of GDP growth (see Figure 11). This was especially evident in 2020, and the gap was maintained in 2021, even as the U.S. economy registered record growth and recovered lost output.

Figure 11: U.S. GDP vs P&C insurance premiums - 1998 to 2021 (Source: Howden



All of this points to further P&C premium income growth in 2022. Whilst businesses are increasingly likely to consider taking larger deductibles or buying less limit to offset the cost of protection, higher pricing will continue to support premium levels this year, even if economic growth is pared back by inflation or by the Omicron variant. Indeed, the degree of price increases in stressed areas of the market could see carriers' top lines grow even if capacity is reduced, as was the case for some cyber writers in 2021.

Inflation

The consequences of inflation for the sector are more nuanced. With core inflation rising in most major economies last year, and coinciding with long-standing concerns about social inflation, (re)insurers have been quick to warn about a more challenged loss environment, for long-tail lines especially. The situation remains highly fluid - much will depend on whether inflation is transitory, an outlook itself complicated by Omicron - but there is some evidence to suggest underwriting impacts may play out differently, at least in the short-term.

Figure 12 shows how U.S. earnings and CPI for four categories relevant to P&C insurance have evolved through the pandemic. Long-tail liability lines are exposed to wage, medical and legal costs; whilst all three have risen to varying degrees, they lagged overall CPI at year-end. Indeed, U.S. medical CPI was significantly lower through 2021 than it was before the pandemic.



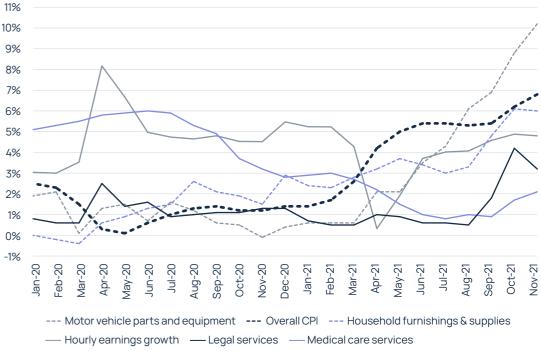


Figure 12: U.S. insurance-related CPI categories vs overall CPI and U.S. earnings -January 2020 to November 2021 (Source: Howden Analytics, BLS)

Rising rebuilding costs, on the other hand, added to the difficulties experienced by the property as a result of COVID-19.

Figure 13: U.S. consumer price index by sector - January 2019 to November 2021



goods rather than services, the path of inflation, and its impact on long-tail lines, will be determined



PRICING PRESSURES ARE **EMANATING PREDOMINANTLY** FROM GOODS RATHER THAN SERVICES.

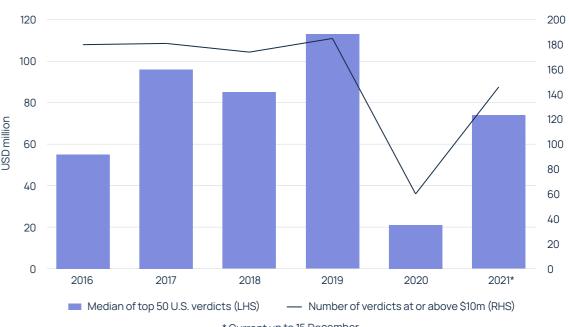
Social inflation

In contrast to CPI trends, social inflation has been largely dormant over the last 18 months, a temporary distortion brought about by COVID. The pandemic's medium to long-term impact on social inflation appears transitory, but it has clearly been disinflationary in the short-term. For example, courts were forced to close temporarily whilst governments intervened to offer financial support to households.

Figure 14 illustrates the impact the pandemic has had in driving down the frequency and severity of 'nuclear' verdict settlements in the United States. According to data from Verdict Search, the number of cases with USD 10 million plus verdicts dropped off a cliff in 2020 before recovering partially in 2021. Declining settlement values have been just as stark, with the median of the top 50 verdicts falling from USD 100 million plus pre-COVID to roughly USD 20 million in 2020. Last year's median was still down considerably compared to pre-pandemic levels, even though litigation picked up in the second half of the year.

This is of course not to deny pressure in the system and aggressive plaintiff tactics that saw litigation costs soar in pre-COVID accident years. They will likely continue to do so once courts reopen fully. But it is equally important to stress that pandemic-related frequency tailwinds have been stronger than what many in the market had anticipated. Federal securities class actions have also fallen, with M&A filings declining markedly in 2020 and activity down across the board in the first half of 2021 (see Figure 15 on page 22).

Figure 14: Nuclear verdict count and settlement data in United States - 2016 to 2021 (Source: Verdict Search)



* Current up to 15 December

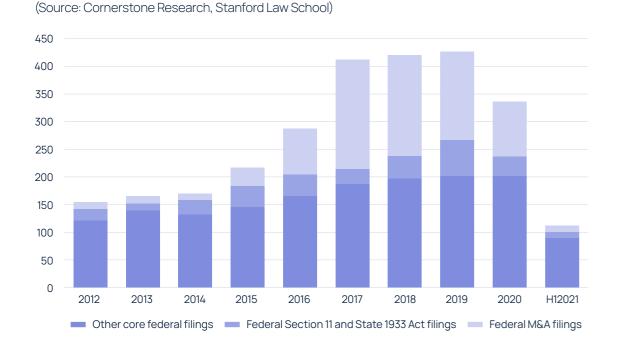


Figure 15: Number of securities class actions by venue - 2012 to H1 2021

ASSERTING THAT FREQUENCY BENEFITS ASSOCIATED WITH DORMANT SOCIAL INFLATION WILL BE TEMPORARY, MOST **CARRIERS HAVE HELD LOSS** PICKS AT PRE-COVID LEVELS.

All this has unsurprisingly benefitted carriers' near-term claims experience at a time of significant rate increases. Figure 16 shows how annualised changes to incurred losses for select U.S. long-tail lines accelerated rapidly between 2010 and 2019, as the market navigated an increasingly adverse liability loss environment.

This trend reversed abruptly in 2020, however, after COVID brought a sharp reduction in claims frequency in several key lines, with commercial auto liability, personal auto liability and products liability all seeing incurred losses fall by more than 5%. Work from home mandates and fewer workplace accidents also assisted worker's compensation results. Similar trends are likely for 2021, given the depth and breadth of lockdowns experienced last year.

(Source: Howden Analytics, National Association of Insurance Commissioners)



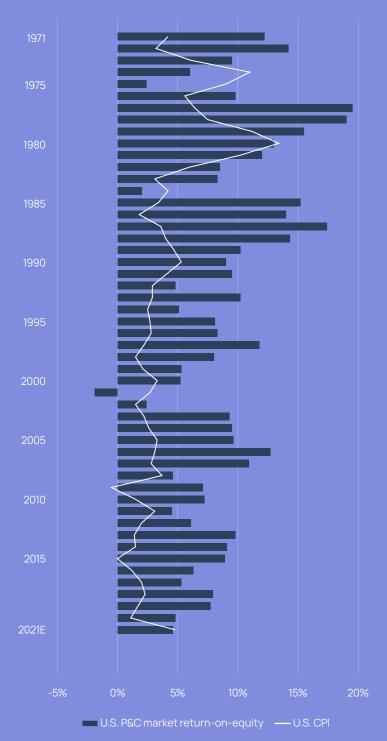
Asserting that these frequency benefits will be temporary, most carriers have held loss picks at pre-COVID levels in anticipation of claims returning to trend once economies restart fully and litigation normalises. Even accounting for cases that may have been settled out of court, the COVID anomaly is unlikely to be sustained as courts work through backlogs. The degree and timeframe of any reversion to trend will be crucial to determining future underwriting performance and pricing.

Figure 16: Annualised change to incurred losses for select U.S. long-tail lines – 2010 to 2020

End of a long-term relationship?

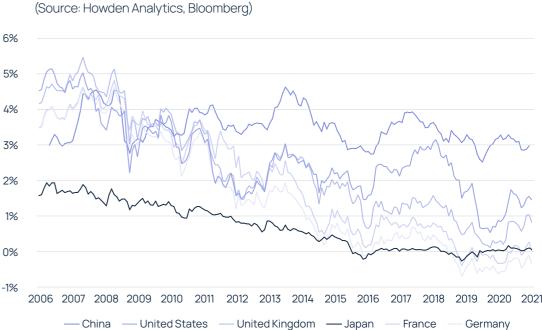
The correlation has weakened, however, as inflation has moderated.





terms once elevated levels of inflation are factored in.





Taken in the round, long-tail classes of business were last year largely insulated from acute inflationary pressures and continued to benefit from depressed loss frequency, even if investment yields remained near historically low levels.

The outlook from here will be closely tied to macroeconomic developments, and inflation in particular. A more benign environment could yet see conservative reserving through the pandemic deliver material reserve releases and help alleviate pressures on insurance buyers that are four years into higher rates and tighter terms whilst still confronting new waves of COVID in what remains one of the toughest trading environments in recent memory.

REPLICATING INVESTMENT

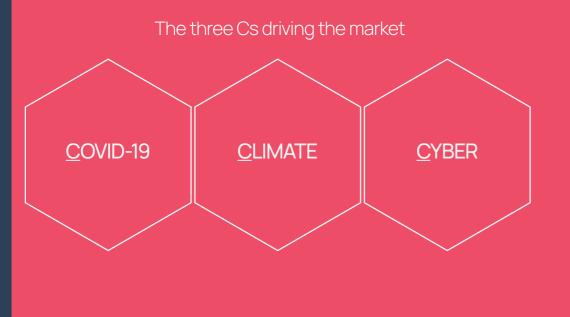
As a result, the prospect this time round of carriers replicating these types of returns looks remote. Figure 18 shows that yields for government securities, although up slightly from their respective nadirs of early 2020, remain low, and are even in some cases negative in real

Figure 18: 10-year government bond yields - 2006 to YE 2021

THE PROSPECT OF CARRIERS **RETURNS ACHIEVED DURING PREVIOUS PERIODS OF HIGH INFLATION LOOKS REMOTE.**

2021: risk landscape reset

2021 was not just about macroeconomic spill-over effects. Structural changes to the loss environment – epitomised by the three Cs of COVID, climate and cyber² – are generating additional demand for risk transfer in an era of heightened risk premia.

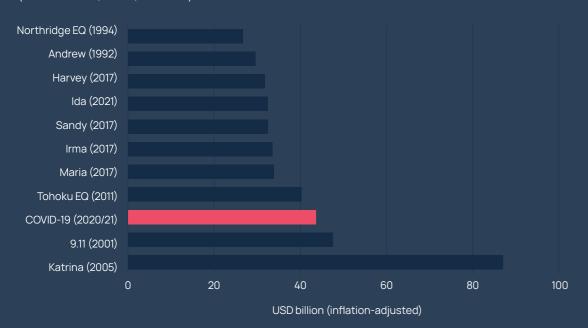


² Please click on the following links to see Howden's research pieces on each of these topics: *Insuring the Invisible, Climate in Peril, A Hard Reset.* **STRUCTURAL CHANGES TO** THE LOSS ENVIRONMENT -EPITOMISED BY THE THREE CS OF COVID, CLIMATE AND CYBER – ARE GENERATING ADDITIONAL DEMAND FOR RISK TRANSFER IN AN ERA OF HEIGHTENED RISK PREMIA. RISKS LIKE THESE ARE MORE DIFFICULT TO QUANTIFY BUT ALSO APPEAR STRUCTURAL. WHICH RAISES IMPORTANT **QUESTIONS ABOUT PRICE** ADEQUACY.

COVID losses: more clarity

The fallout from the COVID crisis has had a meaningful underwriting impact on the (re)insurance sector, although certain carriers have been more affected than others. Figure 19 shows that reported COVID losses have now reached a level equivalent to the third biggest catastrophe loss ever.

Figure 19: Reported COVID-19 losses (including life) vs top 10 insured catastrophe losses (Source: NOVA, HSBC, Swiss Re)



With more than USD 35 billion of (re)insured COVID-19 losses announced in 2020, 90% of which emanated from the P&C market (event cancellation and business interruption coverage predominantly), reported losses were much reduced in 2021 (see Figure 20). Only USD 1.2 billion of additional P&C claims were announced up to Q3 last year, whilst life claims increased by USD 5.5 billion, with more likely to come in 2022 due to the virus' lingering impact on morbidity and mortality.

Figure 20: Cumulative reported insured losses for COVID-19 - 1Q20 to 3Q21 (Source: Howden Analytics, HSBC)



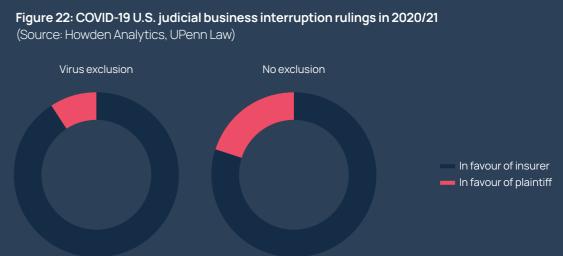


The levelling off of COVID claims confirms Howden's projection made last year that development would follow a more logarithmic trajectory, as shown by Figure 21, and not reach the heights of some of the more aggressive loss predictions of USD 100 billion plus. Such estimates now look manifestly improbable, even when acknowledging remaining uncertainty associated with the event.

(Source: Howden Analytics, HSBC)



as incurred but not reported.



In spite of its large scale and unexpected consequences, COVID industry losses have been eminently manageable. Even if Omicron results in further shutdowns, direct P&C underwriting impacts for previously affected areas such as property and contingency insurance will be reduced significantly by widespread communicable disease exclusions now in place. Perhaps the more enduring legacy of the pandemic for risk managers and underwriters will be altered risk perceptions, particularly for systemic events.

Figure 21: Reported COVID claims in 2020/21 against projections of market loss up to YE21

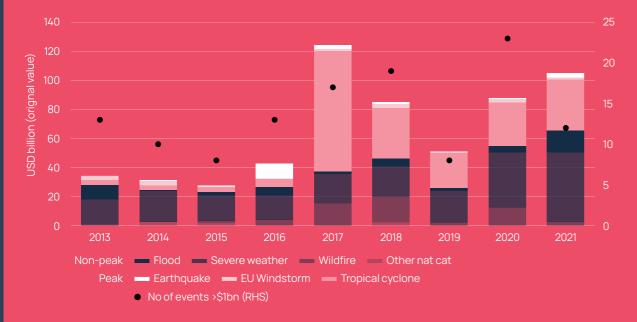
After all, litigation around business interruption is now underway, and despite mixed verdicts depending on jurisdiction, insurers have mostly prevailed in the United States, even for policies where no exclusions existed (see Figure 22). Whilst longer-tail liabilities may yet materialise, (re)insurers have a considerable buffer having set conservative loss picks, with a sizeable portion of losses still booked

Climate: the new normal

Climate risk replaced COVID-19 to become the market's pre-eminent concern in 2021, as another year of elevated catastrophe losses added further to evidence that climate change is influencing the frequency and intensity of certain perils.

Insured natural catastrophe losses exceeded USD 100 billion in 2021 and have now surpassed USD 450 billion in aggregate since 2017 - see Figure 23 for distribution by peril. The latest period of elevated catastrophe losses has been notable not only for its quantum but also for the unusual and mostly non-modelled nature of events.

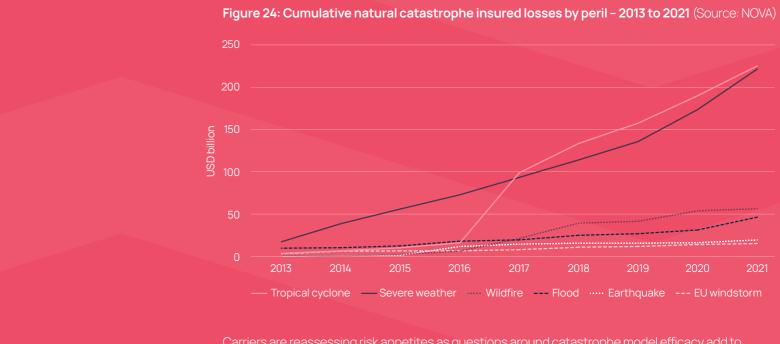
Figure 23: Global insured natural catastrophe losses by peril – 2013 to 2021 (Source: NOVA)



This was epitomised in 2021 by winter storm Uri (record extreme cold / infrastructure failure), the European floods (record rainfall / unprecedented levels of damage) and Hurricane Ida (rapid pre-landfall intensification, slow inland motion and moisture remnants that caused unmodelled, record flooding included the Quad State tornado outbreak (which brought one of the longest tracked U.S. tornadoes ever), more wildfires in the U.S. and Europe, and historic floods in China and Canada, after the latter was subjected to record temperatures in early summer.

Both Uri and the EU floods caused record peril-related insured losses in their respective regions. Their quantum was more akin to levels associated with peak perils such as hurricanes and earthquakes, heralding a structural change to the loss environment. Wildfires have likewise seen a spike in frequency and severity in recent years that has no historical precedent. In California, the state's eight biggest wildfires have burned in the last five years. Accompanying (severe) losses are now an annual occurrence, with approximately USD 50 billion of insured damage reported since 2017.

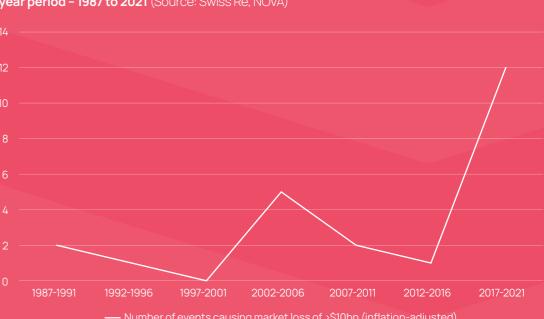
Figure 24 puts this into context by showing cumulative losses by peril since 2013. During this period, secondary perils have been the biggest component of loss in all but one year (2017). At the same time, losses from severe weather, made up predominantly of U.S. convective storm events, have come close to surpassing those from global tropical cyclones, quite a feat given recent hurricane and typhoon activity. The 'peak' and 'non-peak' peril distinctions of the past are becoming irrelevant because of climate change.



Carriers are reassessing risk appetites as questions around catastrophe model efficacy add to uncertainty around price adequacy. Low attaching layers were under close scrutiny during this year's 1 January reinsurance and retrocession renewals, reflecting the prevalence of mid-sized losses that

Bifurcated outcomes for lower and upper layers transpired (as well as loss-free and loss-affected programmes), as markets withdrew capacity or demanded higher pricing for frequency covers. Given the increased volatility of secondary events now strongly linked to climate change, this will be an area of continued focus and action for the market in 2022.

Figure 25: Number of weather-related insurance market losses >\$10bn in real terms by fiveyear period – 1987 to 2021 (Source: Swiss Re, NOVA)



Cyber: rampant ransomware

The cyber insurance market is encountering an equally challenged risk environment, bringing about a correction due to two key factors: ransomware incidents and the threat of aggregated and systemic attacks.

Ransomware will be remembered as the digital pandemic of 2021. The frequency and severity of incidents has grown significantly in recent years, with cyber criminals deploying new tactics and techniques in pursuit of one simple goal: to make money.

Figure 26 compares the number of ransomware and data breach incidents since 2019, and the marked shift towards ransomware that accelerated throughout 2020 and early 2021 (rapidly) before plateauing in 3Q21. The market will be watching closely to see if this flattening trajectory is maintained or even reversed through 2022.

Figure 26: Frequency index for global ransomware vs data breach incidents - 1Q19 to 3Q21

(Source: Howden Analytics, SonicWall, Risk Based Security)



Whilst companies are investing heavily in areas like data and cloud security, bad actors continue to target weaknesses in order to cause disruption, steal data and maximise financial gain. Insurers, as a result, are prioritising (in terms of capacity and price) companies able to demonstrate robust and tested security measures.

Risk appetite is also being impacted by the threat posed by potential aggregated or systemic losses. Targeted and increasingly frequent cyber attacks on system providers and critical infrastructures in 2021 - such as the Microsoft Exchange incident, the attempted hack at a water treatment facility in Florida and the ransomware attacks on Colonial Pipeline and Kaseya - are stark reminders, if any were needed, of the critical threat posed by such events. More can be expected in 2022.

This has brought about a remarkable shift in underwriting sentiment, pivoting from one of loss complacency to one of loss inevitability. Carriers are now taking the view that losses are no longer a matter of if, but when, and, as a result, have high expectations around the sophistication of businesses' cyber security in order to 'qualify' for cyber insurance.

The corollary has been a sea change to perceived price adequacy. Put simply, the cyber market is now being driven by an acute demand and supply imbalance, as corroborated by data published by the Council of Insurance Agents & Brokers (CIAB) in the United States over the last two years (see Figure 27).



Figure 27: Rising demand and claims vs falling supply in U.S. cyber market - 1Q20 to 3Q21 (Source: Howden Analytics, CIAB)



The impact has been significant, with carriers undergoing portfolio remediation and adhering to stringent risk selection criteria based on companies' cyber security hygiene. More restrictive coverage terms, including sublimits, higher retentions, coinsurance and exclusions, have become more prevalent. This is making it difficult for existing buyers to get the cover they need whilst first-time buyers are struggling to secure any coverage at all.

Cyber is also experiencing the most extreme rate increase across the entire insurance market. The degree of repricing is illustrated by Figure 28, which shows Howden's global cyber insurance pricing index, along with average year-on-year rate movements, dating back to 2014. Given the rate of acceleration in the second half of 2021, hardening looks set to continue for some time to come.

This, along with improved risk controls and renewed law enforcement rigour, is likely to support underwriting performance and may encourage new capacity to enter the market this year. After all, the degree of rate increase is currently outpacing the rapid changes to loss trends. Questions nevertheless remain over whether this will compensate sufficiently for what is a highly fluid and volatile cyber risk landscape.

Figure 28: Howden's Global Cyber Insurance Pricing Index - 2014 to September 2021 (Source: NOVA)



Brokers reporting an increase in claims

2022: charting the year ahead

Even before the unexpected twist late last year courtesy of Omicron, the operating environment for 2022 looked uncertain. In addition to the adverse loss landscape, economic growth, whilst robust, was abating and the outlook for inflation split expert opinion. Views have diverged further following the latest COVID mutation, which looks to have some degree of vaccination escape but potentially less severity.

The situation is likely to remain unstable in the nearterm but the future path of growth remains positive. Firstly, economies are more adaptable and resilient to any disruption that Omicron may bring - vaccine rollout continues apace and growth held up well in 2021 despite widespread lockdowns. Current economists' consensus still point to strong GDP growth in 2022 across most regions (see Figure 29), even if the predicted rate of expansion has moderated somewhat.

Figure 29: Annual GDP growth projections - 2021 to 2023 (Source: Howden Analytics, Bloomberg)



(Source: Howden Analytics, Bloomberg)



Additionally, although immediate inflationary risks look precarious, long-term expectations (as set out by the bond market at least) are relatively stable. Figure 30 shows that the U.S. inflation breakeven rate, or gap between the yield of an inflation-linked bond and the yield of a traditional Treasury security, ended 2021 close to 2.3%. Although this was a marked jump from the COVID 2020 nadir, levels were still lower than much of the period between 2009 and 2013, when the U.S. economy was struggling to recover from the financial crisis. This could be a lead indicator of a more benign long-term inflationary picture than many have forecast.



Figure 30: Breakeven rate for 30-year inflation-linked Treasury security - 1999 to 2021

Market resilience

The macroeconomic picture is just one of several factors that will shape the (re)insurance sector from here. Others, such as climate change, the net-zero transition and social inflation, are newer and more difficult to quantify but also appear structural, which raises important questions about price adequacy. The fact that the market is undergoing its biggest correction for close to 20 years is not a coincidence.

It is nevertheless important to stress that the market confronts this situation from a position of strength. Even after the effects of inflation and catastrophes in 2021, sector earnings returned to pre-COVID levels of more than USD 30 billion at the end of the third quarter (see Figure 31), an impressive and rapid 'V-shaped' recovery in its own right, in spite of the pandemic's investment and underwriting impacts. In contrast to the dislocations that have typically followed large losses and macro shocks in the past, the current marketplace remains profitable, resilient and well capitalised.

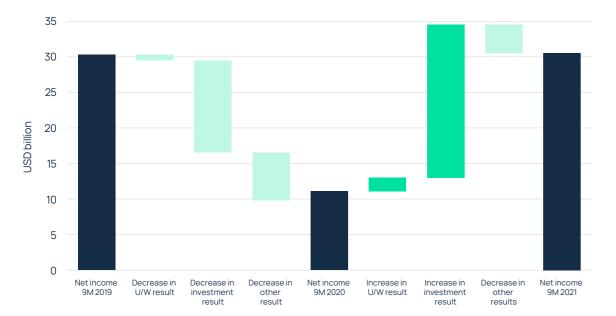


Figure 31: Drivers of (re)insurance sector net income - 9M19 to 9M21 (Source: NOVA)

EVEN AFTER THE EFFECTS OF INFLATION AND CATASTROPHES IN 2021, SECTOR EARNINGS RETURNED TO PRE-COVID LEVELS.

The capital cycle

³ This includes publicly

available data on equity capital raises by new and incumbent carriers, as well as new capital allocated to catastrophe bonds and sidecars up to the end

of 3Q21

Indeed, more than USD 26 billion of new capital³ has entered the sector since the COVID-19 outbreak started in March 2020 (see Figure 32). Motivations for these inflows have for the most part been offensive, reflecting perceived growth opportunities rather than capital replenishments to support stressed participants. Capital generation has been comparable to what transpired in the aftermath of the 9.11 attacks, when the sector's balance sheet was under considerable strain.

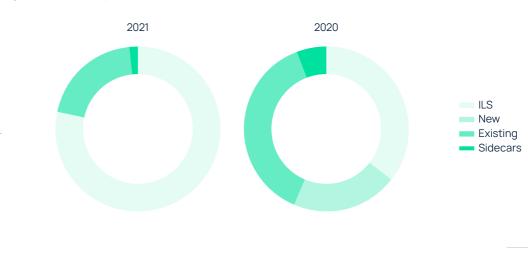
Figure 32: Quantum and timeline of cumulative capital raising following COVID, Katrina and 9.11³ (Source: Howden Analytics, S&P, Artemis)



Inflows moderated in 2021, adhering to the trends established in 2001 and 2005 when new capital started to plateau a year or so after the date of the shock event. Having made significant commitments to new and existing rated carriers early in the cycle, investors were more circumspect about where to allocate capital last year. A number of new ventures were unable to get off the ground, as a result.

Whereas start-ups and scale-ups accounted for the majority of new capital inflows in 2020, they did not even make up a fifth in 2021 (see Figure 33). New ILS transactions held up far better, and therefore assumed the lion's share of deployments in 2021, reflecting the long-standing appeal of the market due to relatively strong rates of return for the level of risks assumed (for catastrophe bonds especially), its uncorrelated and diversifying nature and its strong environmental, social and governance (ESG) credentials.

Figure 33: New capital breakdown - 2021 vs 2020 (Source: Howden Analytics, S&P, Artemis)



The pricing cycle

Higher rates and improved underwriting margins are likely to continue to attract new capital in 2022. This is unlikely to be a harbinger for soft market conditions, however. New entrants, typically led by experienced c-suite and underwriting teams, as well as scaled-up incumbents, have not had a significant impact on price so far. These are longterm (not opportunistic) plays and underwriting disciplined has prevailed.

The primary market is nevertheless four years into its latest correction, and there were some signs of decelerating rate increases last year in several business lines. Figure 34 attempts to put the current state of play into context by plotting year-on-year pricing changes for global P&C commercial insurance against the market's loss ratio over the last 20 years.

Figure 34: Annualised global P&C rate change vs loss ratio - 2001 to 9M21 (Source: NOVA)



The correlation for much of the period is striking. Three further points emerge from the analysis:

- 1. The global P&C market's loss ratio during the most recent five-year period (2017-21), which averages 68%, compares favourably to what was recorded during the hard market of 2001-05 (75%), when rate changes were last at such elevated levels.
- 2. Two periods of divergence stand out: 2012-16, a time of abnormally low insured catastrophe losses which assisted loss ratios, and 2018-21, when accelerating pricing has boosted underwriting performance.
- 3. Underwriting margins continued to improve through much of the mid-to-late 2000s (2005 apart because of KRW), long after rate changes had turned negative. This was due in large part to carriers releasing redundant reserves into earnings. Likewise with carriers today reserving conservatively to account for long-term views of risk (e.g. higher economic inflation and social inflation), favourable loss ratios could be sustained for some time to come, absent any major market shocks.

As a result, some areas of the market are likely to see further and accelerated rate tempering in 2022. The primary commercial sector, which has seen the bulk of price increases since 2017, is already showing signs of waning rate momentum in most business lines, albeit from a high level and with pockets of rate hardening in challenged classes. Reinsurance, which has generally lagged, saw mixed outcomes at 1 January, with property exposed segments accelerating and casualty moderating (see Figure 35). The pricing landscape reflects perceived levels of risks across the market.

No two cycles are the same, but this market's ability to differentiate, even during such challenging times, underscores the importance of expert intermediary advice in securing capacity that continues to be deployed cautiously. Strong relationships have never been more important in helping all stakeholders navigate fast changing market dynamics.



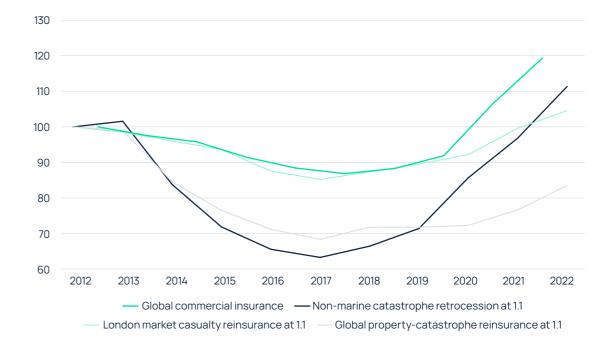




Figure 35: Howden pricing index for primary, reinsurance and retrocession markets - 2012 to

THE PRICING LANDSCAPE REFLECTS PERCEIVED LEVELS

Expert advice in extraordinary times

With hard market weariness now prevalent, insurers should weigh the implications of price swings and supply constraints. Irrespective of market cycles, clients expect the insurance sector to innovate, develop creative solutions and offer sufficient capacity, especially during one of the most significant periods of change in living memory.

The macro environment is shifting, making the risk landscape more challenging to predict. With the series of megatrends identified in this report - higher inflation, low investment yields, elevated catastrophe loss activity, climate change, new cyber threats and general risk aversion – access to original research and insights is crucial.

As an intermediary, we are conscious of our position in the market and our responsibility to inform the discussion in the interests of clients. This paper attempts to do just that. By bringing important sector trends to the fore, Howden is leading the discussion, enabling us to facilitate the most innovative client solutions. We look forward to working closely with insurance and reinsurance companies in this endeavour, and supporting clients in managing change and securing the best coverage available in the marketplace.

> THE MACRO ENVIRONMENT **IS SHIFTING, MAKING THE RISK LANDSCAPE MORE** CHALLENGING TO PREDICT.

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