

Tower (TWR)

Reassessing Flood and Climate Change Risks

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Tower (TWR) has released an important change in how it assesses flooding risk after a year of background research, analysis and extensive modelling. This had been signalled but represents an upscaling in data analytics to more fairly price customer risk for their actual location. The decision to move to risk-based pricing was heavily driven by recent elevated weather-related costs and the need to get ahead of the inevitable impacts of Climate Change. We believe this is an ongoing sign of TWR using data and technology to position itself as a more nimble regional insurer.

NZX Code	TWR	Financials: Sep/	20A	21E	22E	23E	Valuation (x)	20A	21E	22E	23E
Share price	NZ\$0.65	NPAT* (NZ\$m)	11.9	19.8	22.3	27.5	PE	22.6	13.7	12.2	9.9
Spot Valuation	NZ\$0.85 (from 0.95)	EPS* (NZc)	2.9	4.7	5.3	6.5	EV/EBIT	n/a	n/a	n/a	n/a
Risk rating	Medium	EPS growth* (%)	-39.7	64.6	12.6	23.6	EV/EBITDA	n/a	n/a	n/a	n/a
Issued shares	421.6m	DPS (NZc)	0.0	4.5	4.5	5.3	Price / NTA	1.2	1.2	1.3	1.2
Market cap	NZ\$272m	Imputation (%)	0	0	25	100	Cash div yld (%)	0.0	7.0	7.0	8.1
Avg daily turnover	427.8k (NZ\$311k)	*Based on normalised profits					Gross div yld (%)	0.0	7.0	7.7	11.3

What has changed?

- **Earnings:** Earnings forecasts have been updated, with forecast FY21 NPAT largely unchanged. However, FY22 and FY23 estimates have been lowered, mostly relating to a much more conservative view of weather related claims costs which may not eventuate.
- **Valuation:** Reduction in spot valuation from NZ\$0.95 to NZ\$0.85.

New flood pricing announced

TWR has undertaken a year-long project to re-assess dwelling flood risk using new data, analytics, and extensive mapping and scenario analysis to better understand customer risk. This forms a critical step in managing the threat of climate change. Around 90% of customers will see a slight drop in their flood risk component due to this reassessment, while remaining customers will see price rises and a small number of policies will not be renewed. These new prices will take twelve months to flow through fully.

Changes to forecasts

We have lowered NPAT forecasts for FY21, FY22 and FY23 by -2%, -25% and -24% respectively, taking a more conservative view of claims and large event costs. Given the uncertain and volatile nature of weather events investors should be prepared for a level of earnings volatility. A more nimble TWR has shown moderate growth in Gross Written Premium (GWP) as it leverages its new digital platform to drive the Direct business and write additional Partnership deals. We have reassessed growth prospects and increased GWP forecasts medium term. We now expect reported NPAT of NZ\$20.7m in FY21, NZ\$22.4m in FY22 and NZ\$27.5m in FY23. Given its financial strength, we believe the Board can pay annualised 4.5cps in dividends as a floor and in future years pay 60% to 80% of cash NPAT when earnings allow in years where weather events are lower than expected.

Valuation update

Our new blended methodology valuation sits at NZ\$0.85. TWR trades at a discount to its key listed peers. Our new valuation assumes the multiple discount relative to peers closes somewhat but is not removed due to TWR's lower Return on Equity (ROE). Improved investor sentiment is likely to transpire over the next one to two years as management progresses with crucial growth drivers, completes repricing customer risks and fully transitions IT systems. Some form of capital return or buyback remains possible. Given that annual dividends of 4.5cps appear sustainable longer-term, producing a yield of ~7.0% (albeit mostly unimputed FY22), TWR remains attractive at current levels despite heightened climate change-related risk.

Market data (NZ\$)						Spot valuation (NZ\$)						
Priced as at 10 Nov 2021						0.65	1. PE relative					0.79
52 week high / low						0.89 / 0.57	2. P/Book relative					0.83
Market capitalisation (NZ\$m)						274.1	3. DCF					1.01
Key WACC assumptions						DCF valuation summary (NZ\$m)						
Risk free rate						2.30%	Total firm value					425
Equity beta						1.20	(Net debt)/cash					2
WACC						10.3%	Less: Capitalised operating leases					n/a
Terminal growth						1.5%	Value of equity					426
Profit and Loss Account (NZ\$m)						Valuation Ratios						
Sales revenue	2019A	2020A	2021E	2022E	2023E	2019A	2020A	2021E	2022E	2023E		
Normalised EBITDA	n/a	n/a	n/a	n/a	n/a	EV/EBITDA (x)	n/a	n/a	n/a	n/a		
Depreciation and amortisation	n/a	n/a	n/a	n/a	n/a	EV/EBIT (x)	n/a	n/a	n/a	n/a		
Normalised EBIT	n/a	n/a	n/a	n/a	n/a	PE (x)	13.8	22.8	13.9	12.3		
Net interest	n/a	n/a	n/a	n/a	n/a	Price/NTA (x)	1.2	1.2	1.2	1.3		
Associate income	0	0	0	0	0	Free cash flow yield (%)	9.0	6.9	25.5	23.2		
Tax	n/a	n/a	n/a	n/a	n/a	Net dividend yield (%)	0.0	0.0	6.9	6.9		
Minority interests	0.2	0.4	0.9	0.1	0	Gross dividend yield (%)	0.0	0.0	6.9	7.6		
Normalised NPAT	16.6	11.9	19.8	22.3	27.5	Key Ratios						
Abnormals/other	0	0	0	0	0	2019A	2020A	2021E	2022E	2023E		
Reported NPAT	16.6	11.9	19.8	22.3	27.5	Return on assets (%)	n/a	n/a	n/a	n/a		
Normalised EPS (cps)	4.7	2.9	4.7	5.3	6.5	Return on equity (%)	5.7	3.4	5.6	6.3		
DPS (cps)	0	0	4.5	4.5	5.3	Return on funds employed (%)	0.0	0.0	0.0	0.0		
Growth Rates						EBITDA margin (%)	n/a	n/a	n/a	n/a		
2019A	2020A	2021E	2022E	2023E	2019A	2020A	2021E	2022E	2023E			
Revenue (%)	6.8	8.0	6.6	5.0	7.6	EBIT margin (%)	n/a	n/a	n/a	n/a		
EBITDA (%)	n/a	n/a	n/a	n/a	n/a	Capex to sales (%)	10.9	2.8	3.9	4.0		
EBIT (%)	n/a	n/a	n/a	n/a	n/a	Capex to depreciation (%)	n/a	n/a	n/a	n/a		
Normalised NPAT (%)	n/a	-28.2	66.3	12.6	23.6	Imputation (%)	0	0	0	25		
Normalised EPS (%)	n/a	-39.7	64.6	12.6	23.6	Pay-out ratio (%)	0	0	96	85		
Ordinary DPS (%)	n/a	n/a	n/a	0.0	16.7	Capital Structure						
Cash Flow (NZ\$m)						2019A	2020A	2021E	2022E	2023E		
2019A	2020A	2021E	2022E	2023E	2019A	2020A	2021E	2022E	2023E			
EBITDA	n/a	n/a	n/a	n/a	n/a	Solvency capital	155.9	150.5	184.5	198.0		
Working capital change	n/a	n/a	n/a	n/a	n/a	Minimum solvency capital (MSC)	56.6	52.3	59.2	59.2		
Interest & tax paid	0	0	0	0	0	Total regulatory capital	106.6	102.3	83.3	84.2		
Other	0	0	0	0	0	Solvency ratio (%)	275	287	312	334		
Operating cash flow	24.6	18.9	69.8	63.5	56.6	Operating Performance						
Capital expenditure	(37.6)	(10.5)	(15.5)	(16.7)	(17.9)	2019A	2020A	2021E	2022E	2023E		
(Acquisitions)/divestments	0	(9.5)	(14.0)	(4.4)	0	Gross written premium	356.8	377.2	401.3	432.3		
Other	(42.0)	(9.4)	(35.0)	(2.8)	(2.9)	Gross earned premium	345.0	372.6	397.1	416.8		
Funding available/(required)	(55.0)	(10.5)	5.3	39.6	35.8	Reinsurance premium	(55.0)	(57.2)	(62.4)	(64.4)		
Dividends paid	0	0	(10.5)	(19.0)	(22.1)	Net earned premium	290.0	315.3	334.7	352.3		
Equity raised/(returned)	0	44.9	0	0	0	Net claims expense	(175.7)	(181.1)	(202.3)	(212.8)		
(Increase)/decrease in net debt	(55.0)	34.4	(5.2)	20.6	13.6	Large event claims expense	(1.3)	(9.7)	(14.0)	(20.0)		
Balance Sheet (NZ\$m)						Management & sales exp.	(116.0)	(126.6)	(127.9)	(133.3)		
2019A	2020A	2021E	2022E	2023E	2019A	2020A	2021E	2022E	2023E			
Working capital	171.6	184.1	177.7	166.4	178.8	Underwriting profit	20.6	31.8	29.0	30.6		
Fixed assets	9.1	10.0	10.0	10.3	10.7	Investment and other revenue	7.0	6.4	1.2	1.3		
Intangibles	106.7	119.6	130.3	139.0	142.5	Financing and other costs	(0.3)	(1.1)	(0.3)	(0.3)		
Right of use asset	0	7.2	14.6	12.7	10.8	Profit before tax	26.0	20.3	30.5	33.9		
Other assets	278.1	277.6	302.7	302.7	302.7	Tax expense	(9.2)	(7.9)	(9.9)	(11.5)		
Total funds employed	565.5	598.6	635.3	631.1	645.5	Profit after taxation (Rep)	16.8	12.3	20.7	22.4		
Net debt/(cash)	(47.1)	(80.1)	(73.5)	(94.1)	(107.8)	Abnormals	1.1	(1.3)	0	0		
Lease liability	0	8.7	14.8	12.0	9.1	Comprehensive profit	17.9	11.0	20.7	22.4		
Other liabilities	319.9	322.9	338.1	353.9	379.5	Key ratios						
Shareholder's funds	290.9	345.0	352.9	356.2	361.6	2019A	2020A	2021E	2022E	2023E		
Minority interests	1.8	2.2	3.0	3.1	3.1	Tower Direct GWP growth %	9.2%	13.7%	10.2%	7.4%		
Total funding sources	565.5	598.6	635.3	631.1	645.5	Partnership GWP growth %	2.9%	2.8%	3.5%	10.0%		
						Total GWP growth %	6.1%	5.7%	6.4%	7.7%		
						Total claims ratio %	49%	49%	53%	53%		
						MER %	40%	39%	38%	36%		
						Combined ratio %	89%	88%	91%	90%		

Summary of Investment Case

TWR remains a well-capitalised regional focussed general insurer. While the elevated level of claims & events is frustrating in the short to the medium-term, the company is well placed to fairly reprice customer risk and as such, pass on the climate change risk over the medium term. Management has now got the IT platform in a position where TWR is getting ahead of competitors and should complete the transition of all customers to the one cloud-based platform within 18 months. This new level of nimbleness should allow continued business growth, either direct or via partnerships, better cost management, and a scalable platform to target new product segments and allow reasonable returns to shareholders. As returns improve so should the market's confidence that TWR can adapt to a world in terms of climate and technological change. The Board has the benefit of looking through these recent significant events regarding the level of dividend due to a strong balance sheet. The Board's stated dividend policy is for 60–80% of cash earnings paid as dividends, where prudent to do so, allowing for capital retention to reduce risk and pursue accretive acquisitions.

Valuation & Earnings Changes

Key drivers that impact our valuation include variability of large weather events, management's ability to adequately price for risk, growth in the book via direct and partnership deals and management's control of costs. We update our valuation with a **base case fully diluted spot valuation for TWR of NZ\$0.85**. Our key assumptions include:

- Reinsurance expenses, large claims expenses and management expenses are more conservatively modelled
- Underwriting profit margins lift marginally over time driven by growth rather than any cost out story
- Tower continues to trade at a discount to its peers on a PE & P/Book basis given lower ROE
- NZ\$10m further strengthening of Christchurch Earthquake (CEQ) claims remain conservative on top of our CEQ outstanding claims estimate of NZ\$19m at FY21 (down a similar percentage drop as seen over 2020)

Figure 1. Forecast earnings changes

NZ\$m	FY21E			FY22E			FY23E		
	Old	New	Change	Old	New	Change	Old	New	Change
Operating Performance									
Gross written premium	402.3	400.9	-0.3%	427.6	432.3	1.1%	445.6	464.3	4.2%
Gross earned premium	399.6	397.5	-0.5%	424.7	416.8	-1.9%	442.6	448.3	1.3%
Reinsurance expense	(58.3)	(62.4)	7.0%	(61.9)	(64.4)	4.1%	(64.4)	(69.5)	8.0%
Net earned premium	341.2	335.1	-1.8%	362.8	352.3	-2.9%	378.2	378.8	0.1%
Net claims expense	(171.0)	(164.4)	-3.9%	(178.7)	(168.4)	-5.8%	(186.3)	(183.3)	-1.6%
Large event claims expense	(14.0)	(14.0)	0.0%	(15.1)	(20.0)	32.8%	(15.8)	(22.0)	39.5%
Management and sales expenses	(123.7)	(127.9)	3.4%	(127.0)	(133.3)	5.0%	(126.7)	(137.3)	8.4%
Underwriting profit	32.4	28.8	-11.1%	42.1	30.6	-27.3%	49.5	36.2	-26.8%
Investment and other revenue	1.2	1.4	13.0%	2.8	3.3	16.2%	4.4	5.3	20.3%
Financing costs	-	-	n/a	-	-	n/a	-	-	n/a
Underlying profit before tax	33.6	30.2	-10.2%	44.9	33.9	-24.6%	53.9	41.5	-23.0%
Income tax expense	(11.1)	(9.9)	-11.4%	(13.3)	(11.5)	-13.8%	(16.0)	(13.9)	-12.7%
Underlying profit after tax	22.5	20.3	-9.7%	31.6	22.4	-29.1%	37.9	27.5	-27.3%
Reported profit / (loss) after tax	21.2	20.7	-2.4%	29.8	22.4	-24.9%	36.5	27.5	-24.5%

Source: Forsyth Barr analysis

What is in this report?

- **How is TWR's management dealing with elevated event risks?**
 - Systems & Processes
 - Flood pricing review
 - Repricing implications
- **Impacts of the changing environment on Tower**
 - Climate change update
 - COVID-19 helpfully aiding the environment
 - NZ climate change impacts
 - NZ Government's response to climate change
- **Appendix** : The UN Climate Change Conferences and the Paris Agreement plus COP26 and New Zealand

How is TWR’s management dealing with elevated event risks?

Investors in general insurance businesses should be aware that weather-related natural disasters and events logically form a part of the investing thesis of owning the stock. As long as these risks are well understood, well modelled, well priced and managed, it can be undertaken profitably.

TWR’s CEO, Blair Turnbull, acknowledged this risk and said to us recently, "Climate change is certainly a critically important theme for Tower". He further said, "it links to pretty much everything we do across Tower – from our customer preferences, internal culture, UW, product & pricing, supply chain and how we manage claims & reinsurance". Given that understanding, TWR's management team appears to be working hard to manage the elevated risks. It is launching new programmes to align premiums better to risk across TWR's fire, flood and motor books and get the business more agile while diversifying into new categories like marine, pet and travel insurance.

Systems & Processes

TWR has articulated, in part, a strategy of investing heavily in its IT platform to develop a scalable and efficient digital platform to grow off. While the business has had several bumps in the road over the last decade regarding IT systems, it now appears to have gained traction to get the vast majority of the customers on to one modern cloud-based network architecture. Of TWR's Direct customers 100% are on the new cloud-based platform, representing around 80% of total NZ customers. Management is targeting June 2022 for the last NZ personal lines customers to transition, with Pacific and commercial clients to follow. With customers acquired via acquisitions progress has been made to get them on the new platform. More specifically, the Youi NZ customer transition is completed and Club Marine should be complete within a couple of months. The ANZ customer transition is approaching the half-way mark and should all be transitioned by the middle of calendar year 2022.

This provides multiple benefits with customers getting better and faster customer experiences, improving the claims assessment and settlement process and allowing a level of customer self-service. For TWR, better automation will aid to drive costs lower. A future policy of rapidly moving any additional acquisitions and all partnerships onto one platform aids in driving TWR towards being a more nimble player in the market and benefitting from scale.

Figure 2. Product innovation



Source: TWR

The core part of the overall strategy emphasises adequately pricing for risk, as seen in Figure 2 above. While this seems obvious for any general insurer, the rapidly changing environment of significant events has meant a new emphasis on ensuring a data-driven decision-making methodology. As such, TWR has been working with external data science partners, including Corelogic, Waikato University and the University of Auckland, to better look into fire and flood risk to improve the way TWR sees, understands and prices these risks.

Risk-based pricing has already been implemented across its earthquake risk book. For example, due to higher earthquake risk, a Wellington homeowner looking to insure their home for NZ\$1m and their contents for NZ\$150k would face annual premiums of ~NZ\$5,045 versus NZ\$2,225 for the same policy in Auckland and NZ\$2,806 in Dunedin.

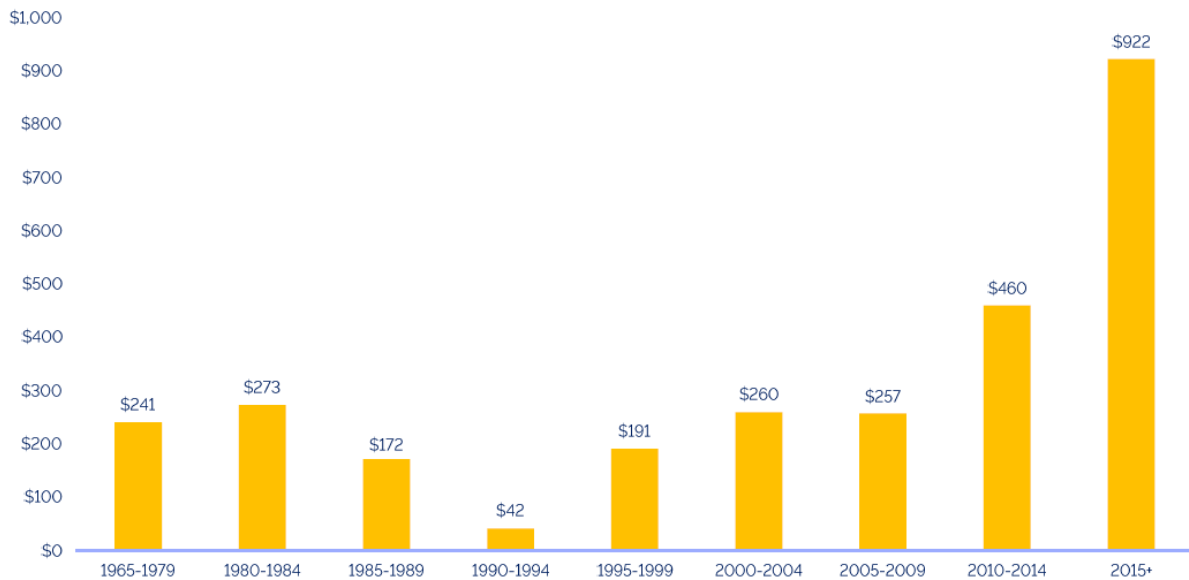
The house repricing due to elevated fire risk is four months into a year-long programme and, under current planning, with **fire risk-based pricing finishing around March 2022**. However, customer policies have yet to see changes due to new data on construction costs. TWR has recently withdrawn its 'full replacement' cover for fire, opting to move to a sum insured basis as for other events. Due to runaway inflation in building costs, this move was expected and reduces risk.

A further review of **coastal erosion and inundation** will likely be undertaken in 2022.

Flood pricing review

TWR has developed new detailed modelling over all NZ dwellings after extensive work with Risk Management Solutions (RMS), the world's leading catastrophe risk solutions company, given NZ's risk of flooding from rain and rivers due to climate change. This was needed as the incidence of flood risk has increased markedly over recent decades.

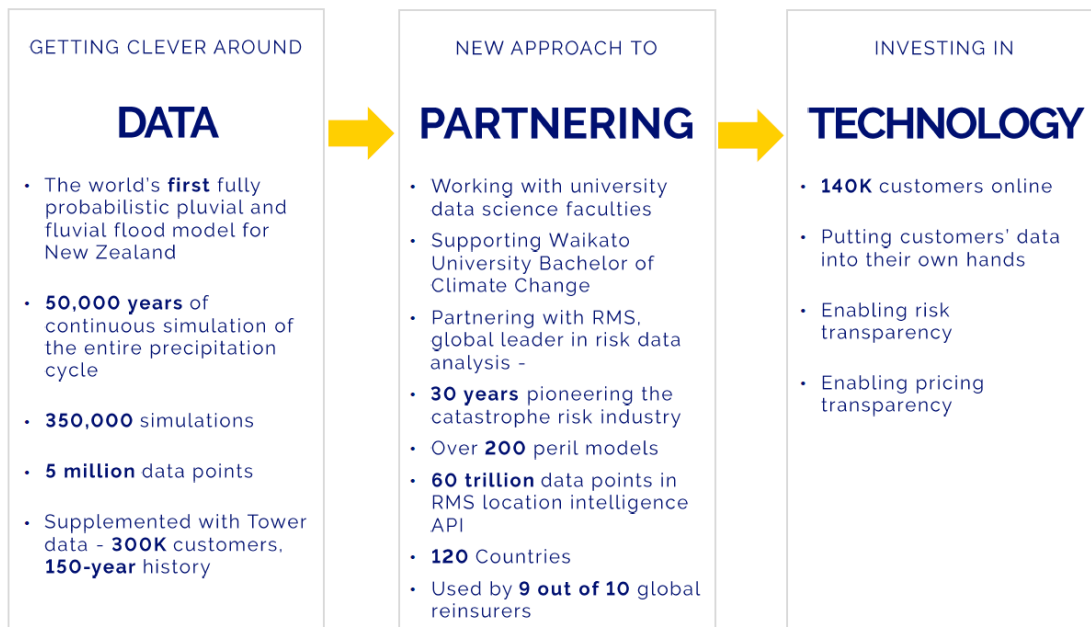
Figure 3. Inflation Adjusted Costs (\$m) for Flood & Storm Events for NZ (all insurers)



Source: ICNZ, TWR

To undertake this work an array of data was collected from Land Information New Zealand (LINZ), the National Institute of Water and Atmospheric Research (NIWA), local and regional councils, and the Insurance Council of NZ (ICNZ) for modelling and simulating events. The new information will form the backbone of new pricing implemented across all TWR's customers, specific to their residential address. TWR can now predict flood impacts on any property based on "how it is constructed, height, number of floors, materials, and flow of the water".

Figure 4. Data Partners and technology



Source: TWR

Reasonably pricing for risk means price reductions for most, and price increases for some, with denial of insurance for a select few. Up until this review flood risk pricing was averaged across whole towns, cities, or broader regions.

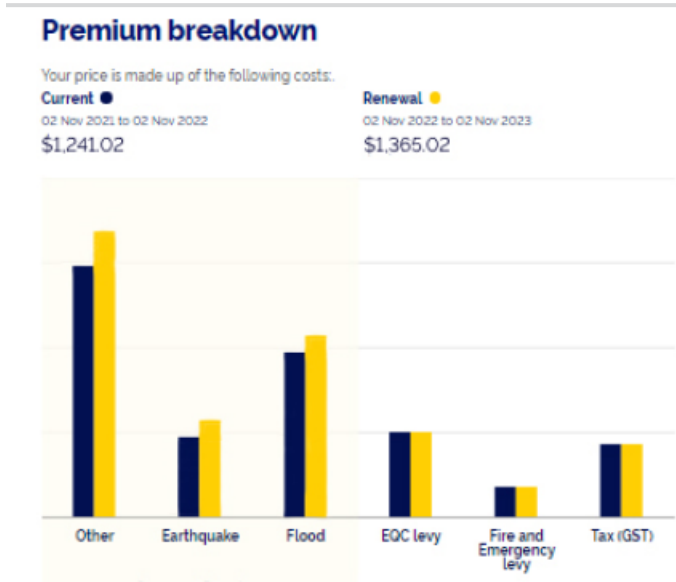
As has been done for earthquake zoning, customers will be allocated into four zones by TWR for flood risk:

- **Flood – low risk zone.** An address expected to have a low chance of river and rainfall related flooding or have little property damage if a flood was to occur.
- **Flood – medium risk zone.** An address expected to have some chance of river and rainfall related flooding and/or see moderate levels of property damage if a flood was to occur.
- **Flood – high risk zone.** An address expected to have a high chance of river and rainfall related flooding and/or see high levels of property damage if a flood was to occur.
- **Flood – very high risk zone.** An address expected to have a very high chance of river and rainfall related flooding and/or see very high levels of property damage if a flood was to occur.

This will flow through to specific pricing data for customers and prospective customers to view. For the vast majority of customers, circa 90%, the change reduces their premiums by around NZ\$25 a year. The remaining 10% of customers will see premium rises. Of the 10% receiving a price increase for 9% the increase is minimal and in the order of NZ\$50 a year and with **around 1% seeing annual price rises greater than NZ\$301**. For a small number of customers their policies will not be renewed under the newer, more stringent assessment criteria.

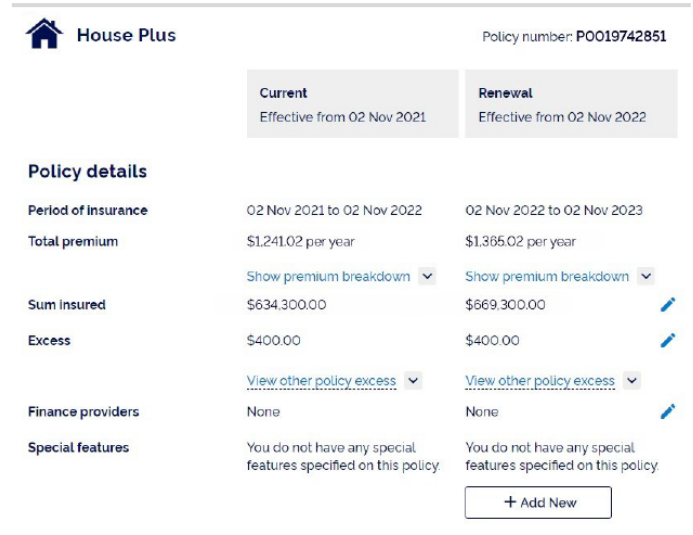
TWR is moving toward being “more open and transparent around insurance and risks associated with climate change” by giving the data to customers, as seen in Figure 5 & 6 below. The flood risk repricing implementation will start as per TWR's announcement this month. Repricing should flow through to all in a little over a year, with risk based flood repricing finishing in December 2022, as any deviations to price commence at a customer's next renewal date.

Figure 5. Premium Breakdown



Source: TWR, Forsyth Barr analysis

Figure 6. Dwelling Price



Source: TWR, Forsyth Barr analysis

Repricing implications

While the timing of the past few years' large events is unfortunate they potentially aid in implementing these new risk-based prices. Given the vast majority of customers either receive a lower premium or a marginal increase it appears highly unlikely we will see any uplift in customer churn. TWR's move to be open and share any information with customers about the risks they see will likely aid customer confidence. Non-customers wanting to see the modelling results, to understand their properties' flooding risk profile, can request a quote. Because TWR will allow prospective customers to view their data this may actually deliver some customer acquisition. Further, customers seeing a price increase are very likely to know they reside in a high-risk zone and so it's unlikely the increase will come as any surprise. As such, **we ascribe no negative effect on this flood repricing strategy.**

Impacts of the changing environment on Tower

Many households across NZ have been buffeted by lightning strikes, rain, wind and flooding over recent months. Instances of moderate flooding damage have been seen impacting TWR's exposure to home, contents and car insurance. The NZ Insurance Council members suggest 2021 may be one of the most extreme NZ has seen in terms of total claims. For the industry significant events over 18 months have included quite a number of flood and rain related costs:

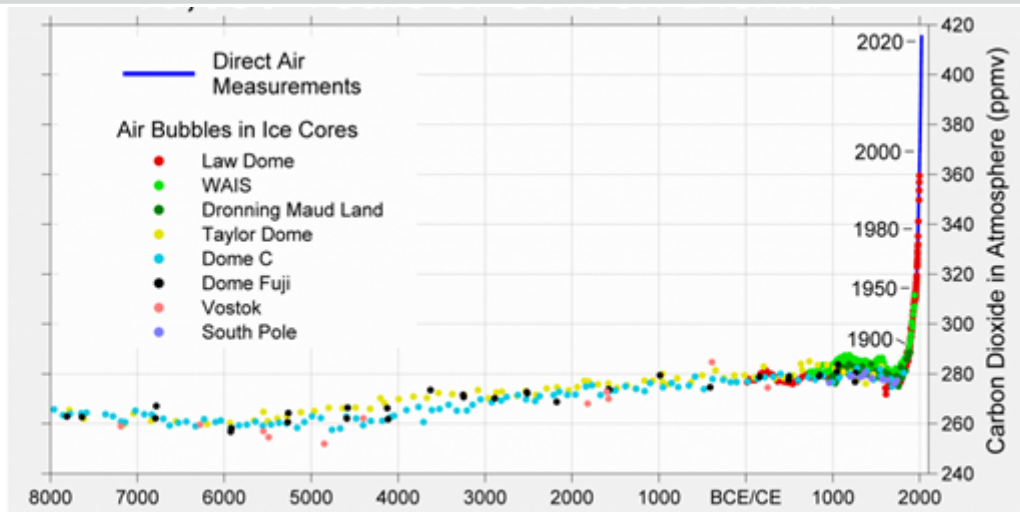
- July 20 Northland Flood (\$44m)
- October 2020 – Lake Ohau bushfire (\$35m)
- November 2020 – Wellington, New Plymouth, Plimmerton & Napier flooding (\$20m)
- December 2020 – Severe hail storm in Marlborough-Nelson
- January 2021 – Central Otago flood (\$3m)
- January 2021 – Canterbury rain and hailstorms
- May 2021 – Canterbury flooding (\$44m)
- June 2021 – South Auckland tornado (\$32m)
- July 2021 – West Coast/Upper SI/North Island and Wellington flooding (\$85m)
- September 2021 – Auckland flooding (\$57m)
- September 2021 – Spate of house fires during COVID-19 lockdown

It could be argued that the increased instances of fire claims or more were associated with bad luck and COVID-19 related overloading of power boards and homeowners inability to properly maintain equipment of fireplaces. Some motor claims will be associated with flooding but the vast majority aren't flooding or connected to climate change. Home and contents represent circa 53% of TWR's Gross Written Premium (GWP), while motor represents a further 36% across Tower's 300,000+ customers.

Climate change update

Scientific research measuring carbon dioxide (CO₂) levels of air trapped in bubbles in the ice caps has been used to accurately measure the levels over time. Extra carbon dioxide in the atmosphere increases the greenhouse effect and is seen as one of the best signals of global warming and climate change. Quoted as one of the longest measurable data series humans have, we see in Figure 6 atmospheric carbon dioxide concentrations over the last 10,000 years measured at multiple ice collection sites worldwide. The calculations show that pre-industrial development CO₂ in the atmosphere was around 280 parts per million (ppm) and hadn't changed dramatically for ten thousand years. Due mainly to the burning of fossil fuels, carbon dioxide levels in the atmosphere have grown steadily as industrial development commenced. Earth's current CO₂ levels are now around 50% higher than those pre-industrial levels. Given the current growth trajectory, the world could reach a dangerous level of double pre-industrial levels of CO₂ by about 2075.

Figure 7. 10,000 Years of CO₂



Source: Berkeley Earth

Watchers of the weather will have noticed a significant increase in large weather events across NZ and worldwide that scientists logically connect to human driven climate change.

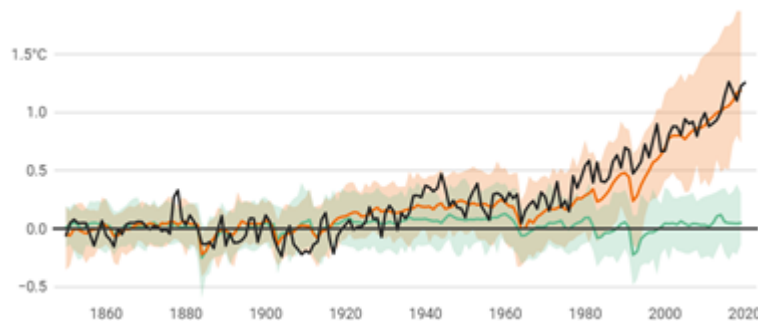
As elevated levels of CO2 gradually increase the earth's temperature, this translates into an increasing frequency and intensity of extreme weather events across the planet. Warming causes a build-up of moisture in storms that falls in heavy downpours. The warmth also translates into more prolonged periods of dry between rainfalls due to the extra heat in the land, that increases evaporation, intensifying drought. In their 2016 "Key aspects of climate change for New Zealand" report, the Royal Society reiterated this and suggested NZ would see rising air and sea temperatures. The outcome implied more rain and an elevated level of drought frequency "double or triple in eastern and northern New Zealand by 2040". Additionally, more fires were anticipated along with a "sea-level rise will that will very likely exceed the historical rate", affecting low lying land and coastal properties.

A September 2021 **Save the Children report "Born into the Climate Crisis"** gave new data from modelling on 178 countries by researchers in Belgium. It revealed that "a child born in 2020 would experience twice as many bushfires, almost three times as many crop failures, two-and-a-half times as many droughts, three times as many river floods and seven times more heat waves as someone born in the 1960s". Save the Children provided four recommendations to the New Zealand Government, which included:

1. Rapidly phasing out fossil fuels
2. Additional spending on climate change
3. Recognising children as stakeholders
4. Scaling social protection systems.

Following three years of work by around 200 scientists the Intergovernmental Panel on Climate Change (IPCC) released its sixth assessment of climate change entitled "Climate Change 2021: The Physical Science Basis". The report stipulated that the window for change to stay within +1.5 degrees Celsius hotter than pre-industrial times was closing rapidly. Every degree of global warming will result in further extreme heat waves, heavy rain, drought, and sea-level rise. The report connects climate change and unprecedented hot spells, and extremes of weather. Their work on global surface temperatures is seen in Figure 8.

Figure 8. Change in Global Surface Temperature



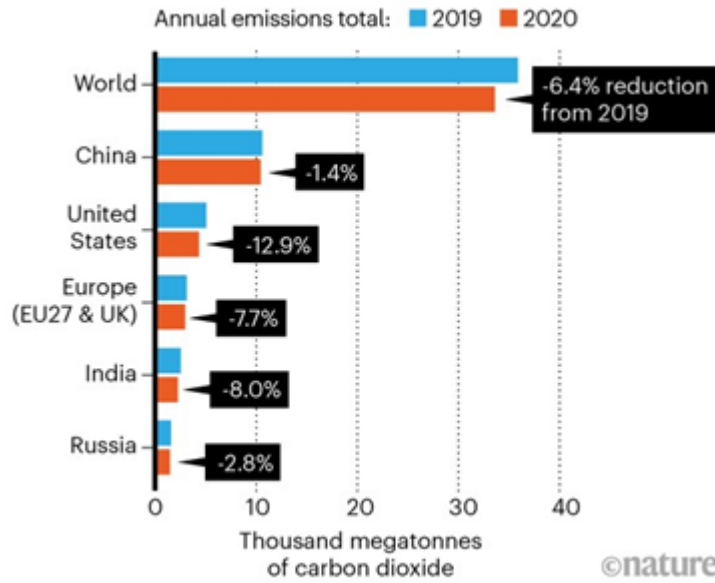
Source: IPCC

According to the IPCC, global temperatures are now circa +1.1C higher on average due to human influence, a number in line with the experience seen in NZ. Australia has heated +1.4C in the 111 years since 1910. Reflection of this is seen with the increase in fires around the country as land-based air temperatures are rising faster than air over sea due to the cooling effect of the sea. The last time the globe was as warm as it is now was 125,000 years ago.

COVID-19 helpfully aiding the environment

After decades of steadily rising, global carbon dioxide emissions fell by -6.4% in 2020 or the equivalent of 2.3 billion tonnes due to the COVID-19 global pandemic. While this is significant it may be short-lived. Lockdowns in many countries contributed to the fall. For example, the US experienced a ~13% decrease in its emissions due partly to the effect of lockdowns on personal transport and aviation (where emissions were down -48% on 2019 levels). See Figure 9 below.

Figure 9. World Annual Emissions



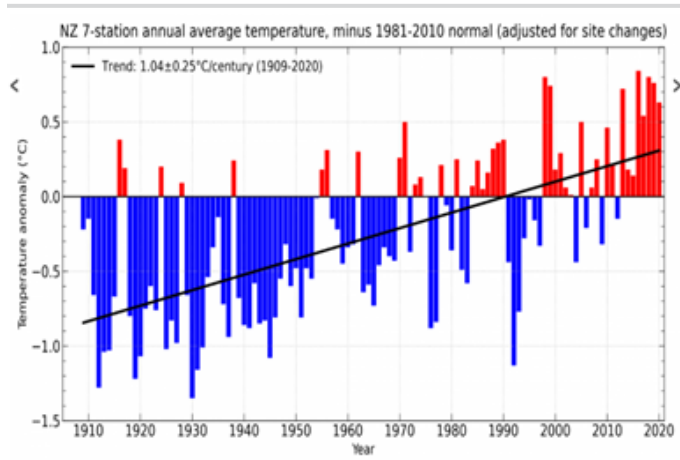
Source: Carbon Monitor programme/Nature analysis

Industrial production has bounced back relatively quickly; however, the transport sector will likely take longer to recover fully. The world’s 6.4% fall in emissions was significant. It does, however, highlight the enormous challenge ahead for many countries to achieve the objectives of the Paris Agreement. A UN Environment Programme estimated the world would “need to reduce carbon emissions by 7.6% per year for the next decade to prevent the globe from warming more than 1.5 °C above pre-industrial levels”.

NZ climate change impacts

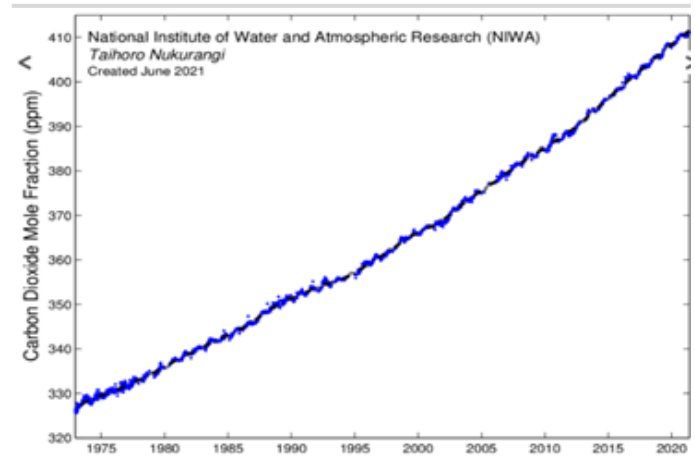
NZ has just gone through the warmest winter on record in 2021, exceeding the previous highest year on record set just last year. According to official National Institute of Water and Atmospheric Research (NIWA) data, the winter NZ experienced for 2021 (incorporating the months of June, July and August) was +1.32°C degrees higher than average, while the winter of 2020 was +1.14°C above average. The NIWA temperature series commenced in 1909 and showed that for the calendar year 2020, it was the 7th warmest year on record for NZ. Six of the warmest years on record have occurred in the past eight years. Figure 10 below graphically displays the variation, around the years 1981-2010 assumed normal, from the commencement of the NZ data series. NIWA noted that the 2020 and 2021 winters were impacted by "La Niña, warm coastal waters, frequent high pressure and more northerly and north-easterly winds than normal". How much La Niña affected recent weather against the longer-dated impacts of climate change is hard to determine but both likely had a compounding effect.

Figure 10. NZ Weather station annual average temperature (minus 1981–2010 normal)



Source: NIWA

Figure 11. Atmospheric Carbon Dioxide at Baring Head

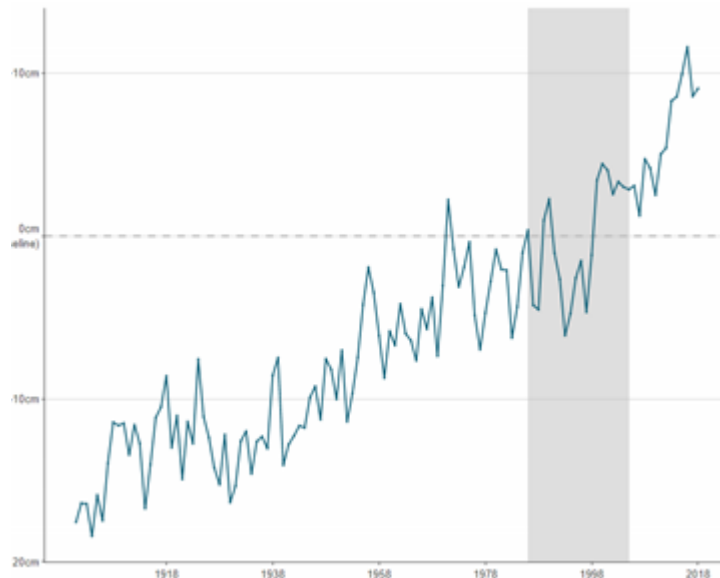


Source: NIWA

CO2 measurements near Wellington at NIWA's clean air station 'Baring Head' have been operating since 1972 and is the longest running measured CO2 series in the Southern Hemisphere. In the 1970s these measurements were around 320 ppm and are now measuring around 412 ppm, as seen in Figure 11 above.

In a 2018 study NZ mean coastal sea levels have risen (relative to land) around 1.8 mm per year since records began in 1901 according to Land Information New Zealand (New Zealand Hydrographic Authority) and NIWA in Figure 12 (below). While the yearly figures don't appear material, the compounding effects over time will have a material impact on erosion and flooding in low lying areas.

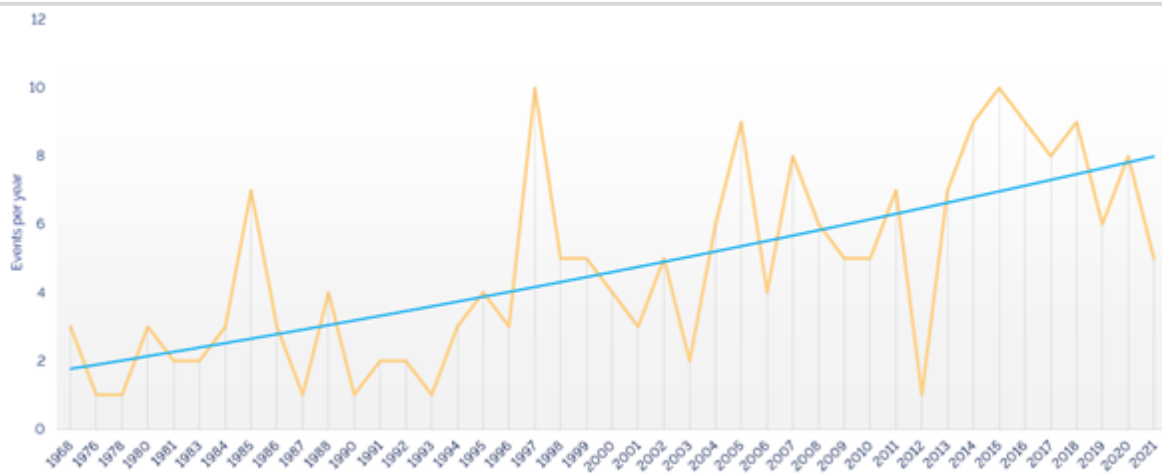
Figure 12. Annual Mean Coastal sea-level rise



Source: NIWA

Large events are a volatile series that logically remain difficult to predict with any certainty, however, a trend of increasing incidence is evident. This is illustrated by the industry wide number of natural disasters events in Figure 13 below going back to the 1960s.

Figure 13. Trend of Natural Disaster Events



Source: ICNZ, TWR

NZ Government's response to climate change

Initially the NZ Government proposed creating separate legislation called the 'Zero Carbon Bill'. In May 2019, however, the NZ Government decided to amend the Climate Change Response Act 2002 instead. The objective was to "ensure that all key climate legislation is within one Act", including NZ's target of reducing emissions to 30% below 2005 gross emissions (or -11% below 1990 emissions) for the period 2021 till 2030. The Climate Change Response (Zero-Carbon) Amendment Act 2019 was formed and enacted into law in November 2019. Its stated aims were to:

- "Contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels".
- "Prepare and adapt New Zealand for the effects of climate change".

Four objectives for implementation were established:

1. Set an emission reduction target for NZ to:
 1. "Reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050".
 2. "Reduce emissions of biogenic methane to 24-47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030."
2. Establish emissions budgets as an interim measure.
3. Force the Government to create and implement policies for climate change.
4. Create an independent Climate Change Commission to provide expert advice and monitor this and future governments on long-term goals.

The Climate Change Commission (CCC), on 1 February 2021, released its draft advice for the first three emissions budgets. After a consultation period, it presented its recommendation to the NZ Government on 9 June 2021. The government will now consider the Commission's advice to set the first three emissions budgets by **31 December 2021**. The first Emissions Reduction Plan (ERP) will likely see:

- Policies and strategies for specific sectors (eg, transport, waste, building and construction, agriculture and forestry)
- A multi-sector strategy to meet emissions budgets and improve the ability of those sectors to adapt to the effects of climate change
- Ways to mitigate the impacts that reducing emissions will have on people and increasing removals will have on employees and employers, regions, iwi and Māori, and wider communities including the funding for any mitigation action
- Any other policies or strategies that the Minister for Climate Change considers necessary.

While the NZ Government has made some initial moves, much more needs doing as limited concrete progress has occurred except for:

- The implementation of the Emissions Trading Scheme (ETS) back in 2008. This forms as a vital tool for pricing carbon to change emitter behaviour and incentivise investment in areas to draw carbon from the environment. A recent spike in the price of the NZ carbon credit from NZ\$30/tonne to NZ\$60/tonne has brought extra attention to the market. However, the jump may also be a negative signal that the country is polluting more. Record amounts of coal were imported into NZ for power generation over winter.
- The 'Clean Car Discount' operates a stick and carrot methodology. Purchasers of battery electric vehicles (BEVs) can apply for up to NZ\$8,650 subsidy for new cars under NZ\$80,000 (including GST and on-road costs) or an NZ\$5,750 discount for any plug-in hybrid electric vehicle (PHEV) up to the same value. On the other side of the incentive scheme, high-emitting cars will be charged based on CO₂ emissions. The charge per vehicle will vary but the maximum amount is NZ\$5,175 for a new vehicle or NZ\$2,875 for a second-hand imported one.
- Around half of NZ's combined greenhouse gas emissions come from agriculture due to the nitrous oxide and methane emitted from animals. Public consultation by NZ Government ended in August 2019. The government then saw fit to place a price on emissions from agriculture from 2025 onwards.
- The 'One Billion Trees Fund' announced by the Labour Government was designed to play a role in emission reduction targets. However, not much has since transpired. If it transpires it is likely one of NZ's most important options to lower carbon dioxide in the atmosphere from NZ's perspective. The government is introducing improvements to the NZ ETS to make it easier for foresters to participate in the scheme, and therefore increase the planting of new forests.

Appendix 1

The UN Climate Change Conferences and the Paris Agreement

Governments worldwide agreed that more work needed to be done to achieve the ambitious plans to reduce the impact of climate change on the planet. As part of this unified effort the landmark Paris Agreement was signed. It "formally acknowledges the urgent need to scale up our global response to climate change". The Paris Agreement was a legally binding international treaty and adopted by 196 Parties at the UN Climate Change Conference of the Parties (COP 21) in Paris on 12 December 2015. It became enforceable on 4th November 2016. The Paris Agreement acknowledged that every country government, city, business and investor had a role to play. Compared with pre-industrial levels, the principal goal was to limit global warming to well below +2 degrees Celsius, preferably +1.5 degrees Celsius. Countries had to commit to reducing their greenhouse gas emissions on a path to achieving a climate-neutral world by 2050. The Paris Agreement works on a five-year cycle, with required actions elevated on each cycle. Countries had to submit their climate action plans in 2020, referred to as Nationally Determined Contributions (NDCs). The NDCs were each country's action plans to reduce their Greenhouse Gas emissions to reach the goals of the Paris Agreement.

The currently running UN Climate Change Conference of the Parties (COP26) kicked off on 31 October in Glasgow and runs till **12 November 2021**. The COP26 aim is "to bring parties together to accelerate action towards the goals of the Paris Agreement". In broad terms, the COP26 has four stated aims:

1. Secure global net-zero by mid-century and keep 1.5 degrees within reach
2. Adapt to protect communities and natural habitats
3. Mobilise finance
4. Work together to deliver.

The UK Government's climate chief said the upcoming meeting should "*focus minds*" and countries needed to bring "*ambitious proposals on coal, cars, cash, and trees*".

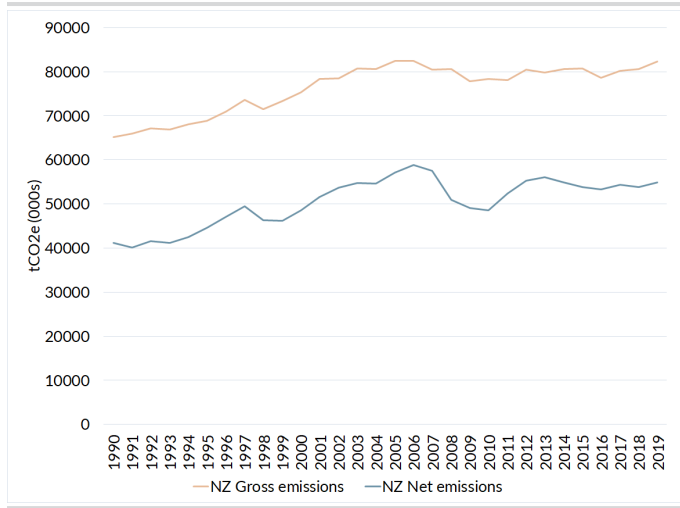
COP26 and New Zealand

New Zealand's delegation at COP26 is being led by Climate Change Minister James Shaw. On the eve of the start of the conference NZ's Government announced a new, more ambitious emissions reduction target. This new target is to reduce net emissions by -50% below 2005 levels by 2030, compared to a -30% reduction previously (albeit two-thirds of this reduction will likely come from international carbon offsets). The plan for achieving New Zealand's targets is due to be released in May 2022. Two subjects of focus at COP26 will be carbon markets and the transparency of climate reporting – areas which New Zealand has recently made progress on.

New Zealand has a mixed track record on reducing emissions. Gross emissions (not including carbon offsets) have been largely flat over the past 10 years. Our 2019 levels were 26% above 1990 mostly due to increases in methane from dairy cattle and carbon dioxide from road transport. Emissions did fall around -5% in 2020, but this was a COVID-19 impact from the sharp drop in transport usage. However, data just released 9 November 2021, by Stats NZ, saw seasonally adjusted greenhouse gas (GHG) emissions from households and industry rose +4.8% in the June 2021 quarter following a +1.4% increase in the March 2021 quarter.

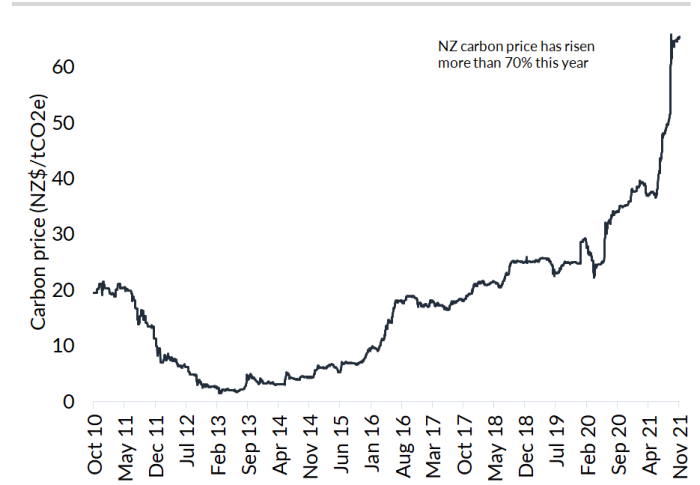
The New Zealand emissions trading scheme (ETS) underwent a revamp this year, including the removal of the NZ\$25 cap on the price of each tonne of carbon. As a result, there has been a significant jump in the price to around NZ\$65 CO₂e/t. Price signals matter. Already this lift is changing behaviours. Estimates suggest carbon farming is now more profitable than traditional land uses such as sheep and beef. There are reports that farms being sold are increasingly being purchased by foresters. This is the intent – using price signals to change economic behaviour. But it will also have costs – (effectively subsidised) land use change lowers the country's overall productive output.

Figure 14. New Zealand Gross and Net Emissions



Source: Forsyth Barr analysis, Stats NZ

Figure 15. NZ Carbon Price



Source: Forsyth Barr analysis, Bloomberg

On the transparency of climate reporting legislation was passed requiring large companies, banks, insurers, investment managers, and public sector entities to provide detailed climate change related disclosures. New Zealand was the first country in the world to announce a move towards compulsory reporting by companies.

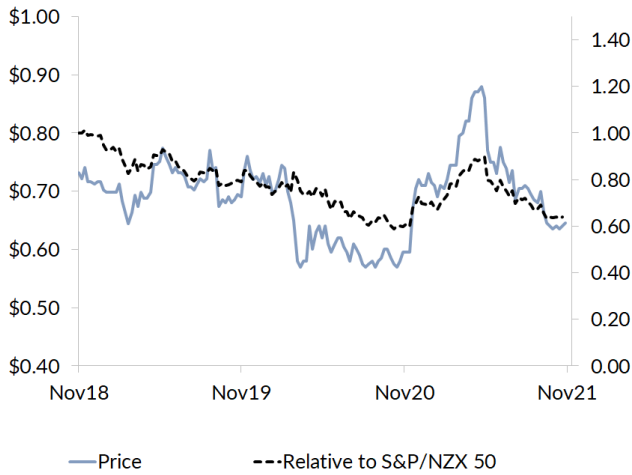
Given pressure from other nations it seems a likelihood that a date is set to remove coal from usage here in NZ. This was one of the key areas of progress in COP26 so far, with a strong move against coal. Real progress on coal will require changes from China, who burns more than 50% of the world's total, and India who consumes greater than the US and Europe combined. This would have implications for NZ's electricity, steel and dairy sectors. Coal has represented around 10% of NZ's electricity production in 2021, 5% in 2020 and 7% in 2019. The rise of coal use in itself could be climate-related, given that drought led to lower inflows into lakes and hydro dams. This was the main culprit, along with gas shortages, that created pressure in the electricity market over winter. The government has already set a target to make electricity generation 100% renewable by the end of the decade. A tighter timeframe for phasing out domestic gas use may also transpire from the already lengthy dated ban on new homes having gas connections by 2032.

Appendix 2

Key Risks to our forecasts and valuation include:

- **Catastrophe events.** Unforeseen natural disasters or earthquake events above expectations or reinsurance levels.
- **Climate change.** A clear trend of increasing frequency and severity of natural disasters (excluding earthquakes), driven in part by climate change, could outweigh management's efforts to re-price or may more severely disrupt TWR's reinsurance programme than anticipated. In addition, significant catastrophe events globally may disrupt the availability of reinsurance capacity. TWR's earnings and solvency position remain dependent on the availability of reinsurance.
- **COVID-19** may more severely disrupt the construction and car markets leading to higher than expected claim costs.
- **Government intervention & regulatory risk.** The RBNZ is currently reviewing the Insurance (Prudential Supervision) Act 2010 and solvency standards, with the potential to increase solvency requirements. The Financial Markets (Conduct of Institutions) Amendment Bill is currently in its second reading. This bill proposes establishing a new conduct regime for financial institutions, amends the Financial Markets Conduct Act 2013 to ensure that certain financial institutions and their intermediaries comply with a principle of fair conduct and associated duties and regulations. There is the risk of competition regulation or Commerce Commission intervention on the industry, with Treasury directed to investigate pricing and access issues in property insurance markets back in September 2019 (no further public update has since been provided).
- **Investments returns** may not recover as anticipated.
- **Increased competitor activity** or **newer technologies** could affect growth. This includes longer-term global auto-manufacturers developing autonomous technologies and offering integrated motor insurance.
- **IT platform.** Delays in transitioning the remaining Pacific island or the commercial book onto the one cloud system may impact the company's ability to execute. In addition, in a world of increased technological security risks, an instance of hacking or denial-of-service attack could severely affect the brand or business operations.
- **Acquisition** risk. As TWR progresses with its acquisition strategy to obtain the benefits of scale, it may overpay for this growth and/or not achieve the expected acquisition results.
- **Canterbury earthquake assessments** may increase further in the tail of claims, impacting excess capital. While the number of Canterbury earthquake claims continues to reduce steadily, there continues to be new over-cap claims from the EQC, albeit the Statute of Limitations is starting to come into play.

Figure 16. Price performance



Source: Forsyth Barr analysis

Figure 17. Substantial shareholders

Shareholder	Latest Holding
Bain Capital Credit LP	20.0%
ACC	8.4%
Salt Funds Management	7.0%
Investment Services Group	6.5%
NZ Funds Management	5.2%

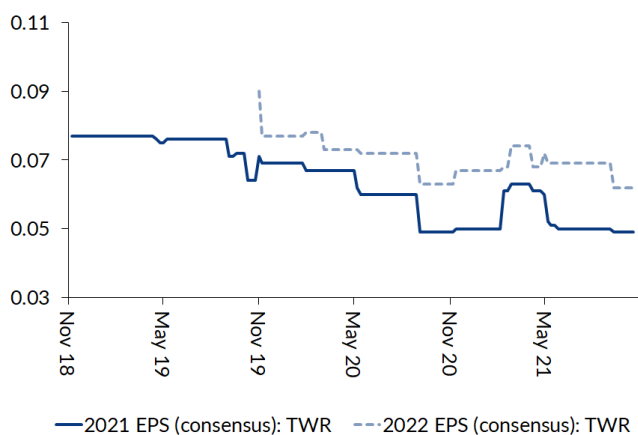
Source: NZX, Forsyth Barr analysis, NOTE: based on SPH notices only

Figure 18. International valuation comparisons

Company	Code	Price	Mkt Cap (m)	PE 2021E	PE 2022E	EV/EBITDA 2021E	EV/EBITDA 2022E	EV/EBIT 2021E	EV/EBIT 2022E	Cash Yld 2022E
Tower Ltd	TWR NZ	NZ\$0.65	NZ\$272	13.7x	12.2x	n/a	n/a	n/a	n/a	7.0%
Heartland Group Holdings *	HGH NZ	NZ\$2.31	NZ\$1,363	15.1x	14.3x	n/a	n/a	n/a	n/a	5.2%
Insurance Australia Group	IAG AT	A\$4.58	A\$11,290	<0x	18.2x	n/a	n/a	n/a	12.3x	4.3%
Suncorp Group	SUN AT	A\$11.23	A\$14,408	14.5x	15.4x	n/a	n/a	n/a	53.5x	5.6%
QBE INSURANCE GROUP	QBE AT	US\$8.61	US\$12,713	9.1x	13.1x	n/a	n/a	n/a	9.3x	4.2%
Compc Average:				12.9x	15.3x	n/a	n/a	n/a	25.0x	4.8%
EV = Current Market Cap + Actual Net Debt				TWR Relative:		7%	-20%	n/a	n/a	45%

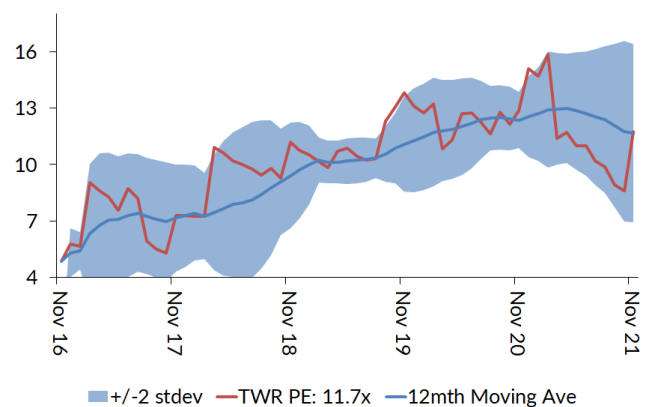
Source: *Forsyth Barr analysis, Bloomberg Consensus, Compc metrics re-weighted to reflect headline (TWR) companies fiscal year end

Figure 19. Consensus EPS momentum (NZ\$)



Source: Forsyth Barr analysis

Figure 20. One year forward PE (x)



Source: Forsyth Barr analysis

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