

# Insurance pricing

## Calculating premiums

Pricing insurance risks is a complicated process that relies on historical data and future forecasting.

Insurers use

- previous claims data – both from the customer and from other customers insuring similar assets
- statistical analysis
- predictions of future likelihoods based on mathematical projections
- natural hazard and building data
- records of past weather patterns and predictions of future weather events
- other data that can help them understand the person and the asset or assets they're insuring.

The more factors come together in a particular risk profile, the more complicated it is to price.

Every factor in a risk profile will have an impact on the premium allocated to the risk. Factors that **increase** the likelihood of a claim tend to **increase** the premium. Factors that **reduce** the likelihood of a claim tend to **decrease** the premium.

These factors don't always impact premiums equally.

- If a factor makes it more likely a customer will make a low-value claim, it might only raise the premium a little.
- If a factor makes it more likely a customer will make a lot of small claims or one very big claim, it might result in a much larger premium.

In complicated or unusual circumstances, additional underwriting is done to ensure a fair and reasonable premium is offered. This premium will be calculated to align with the risk profile of the asset and customer being insured.

## Things that influence premiums

Insurers look at different risk groups for each type of insurance. A risk group is an asset or entity that risks need to be defined for.

For car insurance, there are 2 risk groups:

- the vehicle
- anyone driving the vehicle.

### EXAMPLE



At a minimum, an insurer will want to know

- the age and gender of the main driver
- the location of the car
- the value of the car
- the size of the car's engine
- whether the main driver has had any car accidents, received any speeding tickets or made any insurance claims in the past
- anything else that might affect how they price the risk.

### EXAMPLE



Age and gender of the main driver are important in car insurance. Statistics show that young, male drivers make more insurance claims than both young, female drivers and middle-aged drivers of any gender.

Older drivers also tend to make more frequent insurance claims than middle-aged drivers.

The age-related premiums for these drivers should follow the same pattern. Premiums should be higher for younger drivers, decrease during middle age then increase again into old age.

Calculating premiums is never as simple as relying only on two factors. There are many pieces of information insurers need to consider, each with their own history and statistics that help insurers understand the influence they have on overall risk. When these other factors are accounted for in premium calculations, the total premium may increase or decrease.

Car accidents happen more frequently in Auckland than they do in Dunedin. This may mean that a young, male driver in Dunedin pays less in premiums than a middle-aged driver in Auckland.

### EXAMPLE



It is not uncommon for insurance premiums to change each year.

This can be caused by changes in

- the total number of claims received by your insurer
- the total cost of claims paid out by your insurer
- your policy details have changed – such as your sum insured or who the main driver of your car is
- the cost of reinsurance and other company expenses
- legislation – such as additional costs to repair homes due to health and safety legislation for workers
- technology and innovation – such as parking sensors and computers in cars which need to be replaced instead of repaired
- Increases/decreases in Government levies or GST
- any claims you've made in the past year.

#### TIP



If there's a significant change in your premium, check your policy schedule and ensure everything is recorded correctly. Report any errors to your insurer.

If you still can't understand why your premium has increased, give your insurer a call to discuss it.

## Breakdown of a premium

A typical insurance premium is made up of 3 components:

1. company premium
2. natural disaster premium
3. government levies and taxes

### Company premiums

Company premiums are collected to cover

- the expected cost of claims
- the company's administrative costs – such as staff costs, computers and technology
- any commission that might be paid to an intermediary – including agents, brokers and banks.

Company premiums cover specific risk factors that may vary between policies, such as the age of a car driver or the location of a house.

The premiums insurers collect must cover 2 types of claims:

1. lower value, more frequent claims – these can come from things like broken windows or stone chips
2. higher value, less frequent claims – things like fires and big burglaries.

Insurers collect premiums over a longer time period to spread out the cost of covering claims that don't occur very often but tend to cost more.

If it weren't for reinsurance, insurers would have had to start saving the money they've paid out for the Canterbury earthquakes in 1970<sup>1</sup>.

#### EXAMPLE



### Reinsurance and natural disasters

Big natural disasters are the most expensive events insurers deal with. To make sure they're able to pay all their customers' claims in the aftermath, insurers purchase reinsurance.

Reinsurance is basically insurance for insurers.

Most insurers collect a natural disaster premium to help pay for their reinsurance. Some insurers separate this out on their invoices, while others will include it in the company premium.

Just as with company premium, the cost of the reinsurance for each insurer will depend on

- the assets they insure
- the locations of those assets
- the risks those assets face
- the amount of any loss the insurer is willing to cover themselves – this is like an excess for an insurer and is usually a figure in the millions of dollars
- any other factors relevant to the reinsurer.

How much of the reinsurance costs an insurer passes on to their customers depends on many of the same factors, as well as their approach to pricing.

- An insurer that uses a risk-based pricing model will generally pass more of their reinsurance costs on to customers with riskier assets and less of them on to customers with less risky assets.
- An insurer that uses a community pricing model will usually spread the reinsurance costs more evenly across all their customers.

<sup>1</sup> Based on current earthquake premium rates.

Reinsurance costs have increased in New Zealand in the last few years because of the number of earthquakes and severe storms we’ve suffered and how much these have cost reinsurers.

As reinsurance costs increase, reinsurance premiums also increase. In some cases, reinsurance premiums can be higher than company premiums, especially for houses in riskier locations.

### Levies and taxes

There are 3 charges insurers gather on behalf of the government:

1. **The Earthquake Commission (EQC) levy** – this is collected on domestic fire insurance for the cover EQC provides in the event of a natural disaster. Insurers pass this levy directly to EQC to pay for EQC cover. Customers can’t opt out of EQC cover.



#### TIP

Find out more about natural disaster insurance and EQC cover in our natural disaster insurance consumer guide:  
<https://www.icnz.org.nz/understanding-insurance/consumer-guides/>.

2. **The Fire Service Levy** – this is a tax collected on domestic and commercial insurance policies to fund Fire and Emergency New Zealand. Insurers believe this is an unfair tax and it should be funded out of general taxation, exactly like the Police.
3. **Goods and Services Tax (GST)** – GST is a tax charged on all components of the premium, including the government taxes.

An average<sup>2</sup> \$1,500 home insurance premium may be made up of the following:

Company premium	\$598
Reinsurance	\$300
Fire Service Levy	\$106
EQC levy	\$300
GST	\$196
<b>TOTAL</b>	<b>\$1,500</b>

#### EXAMPLE



<sup>2</sup> Calculated at 1 July 2019.