

## A look into Suncorp's pricing calculations

# Executive Summary

Suncorp's insurance products offer a way to share financial risks and gain peace of mind. Whether it's a destroyed home or a written-off car, our customers can pay an annual premium to be covered against unfortunate events.

Recently, these premiums have changed substantially due to several years of very costly natural disasters. We have also significantly improved how we calculate prices to achieve greater accuracy.

So, understandably, people want to know more about how we determine our premiums to better understand why things are changing. We're happy to outline our process and address some common misconceptions. This is an overview of pricing for personal home and car insurance, however broadly similar processes are also used in most of our other general insurance products.

Our prices are set using an advanced General Insurance Pricing Engine (GIPE) that uses thousands of datasets to calculate premiums, ensuring this is both fair for customers and sustainable for our business. This can be challenging as premiums collected today are used to pay an uncertain amount of claims tomorrow.

The first step is to predict future claims based on our past experiences. To do this accurately we examine each risk covered by the policy individually using in-depth statistical analysis. We might also look at external data like an earthquake risk model or risk maps from government agencies. Using this information we develop an actuarial risk model that estimates the frequency and cost of future claims by looking at risk factors.

Using car insurance for example, our claims data shows that an 18-21 year old driver is almost 60 per cent more likely to lodge an at-fault claim each year when compared to a more experienced 41-55 year old driver. We therefore use age as a risk factor to help forecast how often a driver will need to claim.

Insurance risk factors have traditionally been quite broad in nature, such as all homes in a suburb or age brackets of 10 years or more. Using broad risk factors results in an averaging of premiums, where low risk policyholders help pay for the claims of high-risk policyholders.

New technology and data in our pricing engine, however, means that we can now estimate risk at an individual level with greater accuracy and begin to 'de-average' premiums. We believe it is important to de-average premiums to ensure we offer accurate prices and collect enough premiums to pay future claims.

An example of this new data is in our pricing of bushfire risk, where we now look at the full street address rather than just the postcode. Using the full address allows us to include extra information, such as distance between the home and bushland (measured by satellite imagery) to improve the accuracy of our risk estimate.

After we set a price for each of the main components covered by the policy we combine these figures into a 'technical premium'. This figure represents our estimate of future claims costs for that policy, reinsurance costs and other general business costs.

Like many other businesses, we then apply percentage based discounts and loadings to attract customers, grow our business and produce a profit. This new amount is called a 'base premium' which represents what we intend to sell the policy for.

The final stage in setting a price is to apply relevant taxes, levies and duties. Adding in taxes like GST and stamp duty results in a final 'total premium', which is the amount we ask customers to pay.

Overall, our pricing process includes a large number of calculations and adjustments. The information we have is constantly improving as we seek to offer more accurate premiums and run a sustainable business.

We acknowledge that the community, insurers and government all have a shared interest in reducing insurance premiums and increasing insurance uptake. To this end, we hope to increase understanding of the relationship between claims risk and premiums, and therefore bolster the argument for investing in disaster mitigation and better risk management.

Preventing natural hazards from becoming natural disasters will mean there is less of a need for insurers to pay claims which would allow us to offer lower, and more affordable, insurance premiums.

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## About the Suncorp Group

The Suncorp Group of companies or 'Suncorp' is one of Australia's largest financial services groups. Our portfolio of leading brands offer financial products across personal insurance, commercial insurance, banking, life insurance and superannuation, all with the aim of creating brighter futures for our customers, staff, shareholders and the community.

Suncorp has five core businesses: Personal Insurance; Commercial Insurance; Vero New Zealand; Suncorp Bank and Suncorp Life. These are supported by corporate and shared services divisions. Collectively, the Suncorp Group has around 15,000 employees and holds relationships with more than nine million customers.

## About Suncorp Personal Insurance

Suncorp includes Australia's largest general insurance business in terms of gross written premium. The key to Suncorp's success in personal insurance is its portfolio of well-known brands. AAMI, GIO, Suncorp, Apia and Shannons are some of the brands in the Suncorp Group that have built reputations for insurance innovation, outstanding customer service and trustworthy products.

Suncorp's personal insurance products aim to protect what matters to our customers. Suncorp offers motor, home and contents, travel, boat, motorbike and caravan insurance. Over the 2012-13 financial year, Suncorp Personal Insurance paid more than \$3.8 billion in claims. That's more than \$10 million each and every day.

This document has been produced by Suncorp Personal Insurance.

# Back to Basics

Insurance allows financial risks to be shared among a community. Policyholders each pay an annual premium that goes into an insurance pool. This pool of funds is then used to pay the claims of policyholders when they suffer an unexpected loss caused by one of the agreed risks.

This means that a large number of people pay a small premium so that a small number of people can claim a comparatively large amount. This process converts a costly risk, such as a home being destroyed by fire or a stolen car, into a manageable annual fee. Sharing risk through insurance means that individuals can protect themselves from financial difficulty when things go wrong.

Insurance pools are not like a bank account where money is held for personal use over many years. Instead, insurance pools share money across the community of policyholders on a yearly basis. Money is not normally held over from good years to pay for bad years, as the pools usually operate on an annual basis.

Those fortunate enough not to have to make a claim won't financially gain from purchasing insurance. But they do gain peace of mind by being protected against unexpected financial loss. Insurance is therefore, significantly different to most other financial products.

The role of insurance companies is to offer a fair and sustainable insurance pool to different groups of policyholders. Fairness and sustainability are achieved through the core functions of underwriting, claims management and investment. A profit margin is applied to premiums in return for providing these services.

## Underwriting

Underwriting is the process of determining the level of risk faced by each policyholder, setting a premium to reflect that risk and agreeing to cover a particular policyholder against agreed losses. When we have a good understanding of risks (i.e. lots of accurate data) we can use standardised underwriting called pricing.

Pricing is most commonly used in retail products like car and home insurance. Individual underwriting is most commonly used in large scale commercial risks such as factories. The goal of underwriting and pricing is to keep the insurance pool sustainable by collecting enough premiums to pay customers' claims, cover operating costs and produce a profit for the insurance company.

The premiums paid can be 'community rated' where the price is equal amongst all policyholders, or 'risk rated' where the price is different depending on the policyholder's level of risk. Our premiums are generally risk rated but we sometimes use a mix of community rating and risk rating if necessary, or if required by law.

## Claims Management

Claims management refers to ensuring claims are handled well and are paid according to the agreed terms. As insurance pools are shared funds among policyholders, maintaining a level playing field for claims is critical. We seek to minimise the risk of fraudulent or exaggerated claims, and also to manage the costs of repair and recovery. This manages the overall cost of claims and allows us to offer lower premiums to policyholders.

## Investment

Investing premiums means that insurers can grow the insurance pool. This offsets costs and means we can offer reduced premiums for policyholders and increased profits for shareholders. Insurance products are generally classed as 'short tail' or 'long tail' to identify the length of time premiums can be invested before they are used to pay claims.

Investment growth is crucial in long tail products, such as Workers Compensation and Compulsory Third Party (CTP), because there is a long time between premium collection and claim finalisation. This means investment returns from bonds and shares can significantly influence the amount of premiums that do (or do not) need to be collected.

The three functions of underwriting, claims management and investment combine to create a fair and sustainable insurance product. This gives policyholders financial protection, sustains the insurance company's business, and helps build a resilient economy that is able to bounce back after disaster.

# Pricing Approach

We aim to offer premiums that are fair to our customers and sustainable for our business. We believe a 'fair' premium for a customer is one that results in a purchase. A 'sustainable' premium is one that collects enough to cover claims, operating costs and also produces a profit for our business.

Determining the right price is challenging, as the costs associated with an insurance pool aren't fully known until well after the policy is sold. A large number of things can change between the time premiums are collected and later used to pay claims. For example, the cost of repairing cars may increase or there could be a large number of unexpected claims from a natural disaster.

As we don't know how many claims we will need to pay, we can't function like a retail business that simply applies a mark-up to the cost of goods sold. Instead, we need to carefully forecast all factors associated with a policy and estimate the right price.

To do this we use a sophisticated pricing engine that uses huge amounts of data to calculate premiums. Our pricing engine uses four key sets of data:

## 1. Risk

This is the largest and most important set of data. Information about prior claims as well as external risk data is used to forecast how likely it is that a claim will be made, and calculate the expected cost of a claim.

## 2. Customer

We use information about customers and their interaction with us, such as how many customers renew their policies or change insurers, to ensure we are meeting customer needs and expectations.

## 3. Competition

We try to estimate the premiums our competitors may offer to make sure we stay competitive.

## 4. Results

We track our performance against business goals such as profitability and return on investment to ensure we are running a successful business.

Our pricing engine uses all this data to calculate a unique premium for each customer's risk. This ensures we offer a premium that is in our view accurate, fair and sustainable. Part of our business approach is to build a quality product and provide great claims service. This means we may not always offer the lowest premium in the market, but we do believe we offer great value for money.

To ensure we maintain a successful and competitive business we make frequent refinements to our pricing calculations when new data or risk models become available. Overall, our pricing approach is to deliver a fair and sustainable premium by accurately forecasting claims, collecting enough premiums to pay claims and operating costs, and ultimately producing a profit for the business.



## Business Goals

Currently, our business goals are to achieve at least 12 per cent underlying Insurance Trading Result (ITR), while maintaining or growing our customer base. As a Group we've also targeted a 10 per cent Return on Equity by financial year 2015, which includes results from our other businesses. More than 70 per cent of our shares are owned by local institutions (e.g. superannuation funds and managed funds) and retail investors (e.g. "mum and dad" shareholders). This means our business returns often benefit Australian households.

ITR is a measure of profitability and means that over a financial year we've collected more in premiums and investment returns than we've paid in claims and operating costs. The amount left over after paying costs is expressed as a percentage of total premiums and becomes our ITR, similar to a traditional profit margin.

We target an underlying ITR, which means one-off or unusual fluctuations, such as significant natural disasters are removed from the calculation. Insurance can be profitable in a good year and make a loss in a bad year, so we use an underlying target to smooth out these fluctuations and focus on longer-term performance.

# Premium Building

Our pricing engine is designed to calculate each individual component of the premium separately so that we can quickly update our prices when new information becomes available. This means premiums are made up of several individual calculations that are combined to build a price for each policy we sell.

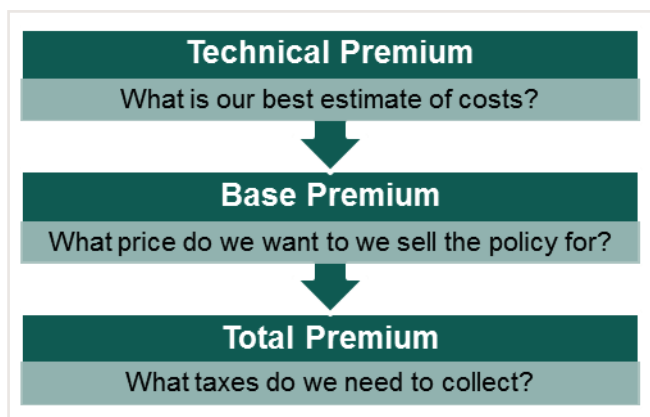
There are three key stages – technical premium, base premium and total premium. Each of these stages looks at a different aspect of the premium. They are combined to come up with the total premium offered.

First, the technical premium looks at all of the costs associated with an insurance policy. This includes the forecast of claims costs, as well as business costs like staff, administration and reinsurance cover. This is by far the largest premium component.

Base premium looks at how much we should sell the policy for in order to run a successful business. We make adjustments at this stage to attract customers and apply a profit margin.

Finally, we apply relevant taxes, levies and duties to form the total premium. This is the amount a customer is asked to pay when purchasing or renewing a policy.

**Figure 1 - Building a premium**



## Technical Premium

The technical premium is an estimate of claims costs and other business costs. This helps us to determine how much we should hold in the insurance pool to pay future claims and cover costs. The real costs (e.g. claims, operating expenses, reinsurance and staff) will vary throughout the life of the policy, so a technical premium is a 'guesstimate'.

### Simplified Example<sup>1</sup> – Estimating an insurance pool

Steve and Rebecca each own a car worth \$1,000 and both want to insure against theft. Our data shows it's normal for one car to be stolen each year and highly unlikely that both cars would be stolen. Accordingly, the insurance pool should hold \$1,000 to cover the theft of one car per year.

In order to accurately estimate the insurance pool, we calculate the costs for each risk (e.g. fire, theft, storm, collision, etc.) covered by the policy separately.

For common types of claims, such as car theft, these estimates are mostly based on 'book experience'. This is data about similar claims and policies that we've handled in the past. For more complex claims, such as flood, we usually rely on information and calculations provided by external experts such as researchers, engineers or hydrologists.

<sup>1</sup> Please note all simplified examples provided are for illustrative purposes of concepts only. Actual pricing calculations are significantly more complex and will differ for each insurance product.

We employ specialist actuaries who use statistics to develop an 'actuarial risk model' that forecasts how often customers will claim ('claims frequency') and how much these claims will cost ('average claims cost'). Multiplying claims frequency by average claims cost provides us with the 'Cost Per Policy' (CPP). This is the average amount we anticipate to pay in claims for each risk covered by the policy.

To help accurately estimate the CPP we look at risk factors that provide a statistical indication of claim risk. Some common risk factors used are years of driving experience, year of construction or insured address. Using these risk factors, we can estimate the unique level of risk for each policy we sell.

Once the CPP for each risk has been calculated, we add other costs associated with the insurance pool. This includes administration, staff wages and reinsurance expenses among other business costs. These costs are also estimated as they can change over time.

Adding up the CPP and business costs for each risk covered by the policy allows us to determine both the overall size of the insurance pool and each policyholder's 'fair share' of this pool. This figure is the foundation of premiums and reflects the different risks faced by the different policyholders to ensure the premium is, in our view, fair and sustainable.

### **Simplified Example – Calculating a technical premium**

In the case of Steve and Rebecca, we need to collect \$1,000 for the pool by charging two premiums. We could collect two \$500 premiums. However, Steve drives an older car that we estimate is 10% more likely to be stolen than Rebecca's newer car.

We instead charge a technical premium of \$525 to Steve and \$475 to Rebecca to create a \$50 difference between the two premiums and reflect the 10% risk difference.

### **Base Premium**

To build the base premium, we apply business pricing to the technical premium. The technical premium represents an estimate of 'cost' of goods sold and the base premium calculation adjusts the price up or down. This accounts for the needs of both customers and businesses.

The adjustments made within the base premium are commercially sensitive and change frequently to remain competitive. Some of the significant components considered in our base premium calculation include:

#### **– Customer Discounts**

We offer a variety of discounts to attract and retain customers. These discounts vary depending on the customer and the policy they are buying but could include discounts like a claims-free reward, a multi-policy discount or a senior's card discount.

#### **– Price Moderation**

We try to limit changes to the base premium each year. Sometimes we may 'cap' premiums to moderate the amount a premium changes from one year to the next. This is done to smooth out fluctuations and reduce the chance of bill shock.

#### **– Business Pricing**

Premiums are tailored to attract new customers and retain existing ones. This is the typical price versus volume adjustment that occurs in every business. We may also adjust prices to complement a business strategy, such as targeting a low-risk area by simultaneously increasing marketing activity and lowering premiums.

## – Profit Margin

A profit margin is applied to meet our business goals and provide a return to investors. Insurers are required by prudential regulations to hold capital in reserve to cover claims, in the event our claims estimates are incorrect. The capital we hold is predominantly sourced from investors who require a return on investment.

By applying these adjustments to the technical premium, we aim to produce a premium that meets both customer and business needs. Similar to the technical premium, base premium adjustments are constantly changed and improved.

### Simplified Example – Calculating a base premium

Rebecca has a starting technical premium of \$475. In order to produce a profit for the business we apply a 10% mark-up. Rebecca holds several policies with Suncorp so we reward her with a 5% multi-policy discount. The new price is \$496.38, however the premium for Rebecca's policy last year was only \$450. We apply a capping discount of \$10 to reduce the premium change and increase the likelihood that Rebecca will renew.

Technical Premium	\$475
Profit Margin (10%)	+\$47.50 = \$522.50
Multi-Policy Discount (5%)	-\$26.12 = \$496.38
Capping Discount	-\$10 = \$486.38
The Base Premium for Rebecca is \$486.38.	

## Total Premium

The final step in premium calculation is to add relevant taxes, levies and duties to the base premium. This forms the amount we ask the customer to pay for coverage and is known either as a total premium or retail premium. It's up to the customer to decide if that price suits their personal circumstances.

We collect the NSW Emergency Services Levy (ESL), Goods and Services Tax (GST) and Stamp Duty (SD) as required by law and where applicable. Each tax or levy is added consecutively which results in the equation: Base Premium + ESL (NSW only) + GST + SD = Total Premium. The consecutive calculation required by law results in a 'tax on tax' effect that can significantly increase insurance premiums.

New South Wales is the only state or territory to apply ESL to insurance premiums. There has been a progressive move away from insurance taxes and we welcome the Victorian Government's recent transition to a property based levy to replace the Fire Services Levy from 1 July 2013.

In New South Wales the ESL is currently charged on base premiums at a rate of 1 per cent for car insurance and 21 per cent for home insurance. We also welcome consultation from the New South Wales Government regarding potential reform of the ESL and look forward to a more equitable emergency services funding model in the future.

Stamp duty of between 5 per cent and 11 per cent is still collected on insurance in all states and territories. The ACT Government however has announced a transition away from stamp duty on insurance. We strongly support the ACT Government's move to reduce insurance taxes and continue to advocate for ongoing insurance tax reform on behalf of our customers.

### **Simplified Example – Calculating a total premium**

Rebecca's Base Premium is now \$486.38. As she lives in New South Wales and is purchasing motor vehicle insurance, Suncorp collects the ESL (1%), GST (10%) and SD (5%).

Base Premium	\$486.38
ESL	+\$4.86 = \$491.24
GST	+\$49.12 = \$540.36
SD	+\$27.01 = \$567.38

The final amount we ask Rebecca to pay to for her insurance cover is \$567.38.

### **Ongoing Improvements**

We're constantly incorporating new data, developing more advanced actuarial risk models and adapting to changes in the business environment to ensure we're offering the best possible premiums. These improvements in our pricing approach means that even though an individual policyholder's circumstances may not change from one year to the next, the premium we offer is very likely to change.

For example, in one year our best estimate flood risk for a particular home might be 'low' and a correspondingly low premium is offered. In the following year, we may receive updated flood mapping that shows the home is actually a 'high' flood risk. This will mean that even though it's the same home, with the same cover and in the same location, the premium will significantly increase from one year to the next. This is because we now have a more accurate estimate of risk.

We also collect data about how customers respond to the prices we offer and how well our business is performing. This allows us to closely monitor the performance of our pricing systems and if required go back to make further improvements.

# Risk Pricing

Insurance premiums can either be 'community rated' or 'risk rated'.

Community rating is most commonly used in health insurance and relies on averages where all policyholders pay a similar premium, regardless of how likely they are to benefit from the insurance pool. Community rating is also used in some compulsory insurance products such as CTP and Workers Compensation insurance.

Risk rating is used in general insurance policies and correlates the premium paid with the likelihood of the policyholder needing to claim. Sometimes general insurance policies use a mix of community rating and risk rating depending on the circumstances (e.g. if it is more practical to community rate, due to the cost of data).

Both types of pricing determine the funds required to pay future claims and collect that amount through premiums paid by policyholders. The key difference is whether policyholders pay an equal premium or a differentiated premium into the insurance pool.

The benefit of risk rating is it introduces a financial incentive to manage risks. Linking premiums with the underlying level of risk means that individuals and communities who take steps to reduce or manage their risks generally receive a lower premium. Conversely, those with higher risk are usually charged more. The inclusion of a risk-based price therefore acts as a messenger to remind people of risk.

This results in a 'price signal' that highlights risk and encourages the community to manage that risk to reduce the likelihood of claims. Over time the inclusion of a price signal encourages ongoing risk reduction, which leads to fewer claims being lodged, a more stable insurance pool and lower average premiums. An excess payable when a claim is made can similarly encourage risk reduction.

As insurance reduces the financial consequences of a risk, pools that don't link premiums with risk can be impacted by 'moral hazard'. This is when policyholders neglect to manage their risks or choose to place themselves at high risk because there's no longer any financial motivation. This moral hazard can quickly lead to an unsustainable insurance pool as the number and cost of claims increases dramatically.

## **Simplified Example – Risk Reduction**

Steve is in the market for a new car. He looks at a few different cars and obtains some insurance quotes. The lowest quote is for a car similar to Rebecca's for \$567.38 – much cheaper than the \$785 quote he had for a different car he was considering. So he buys the car with the lower insurance quote.

In this example, the two cars Steve was considering had different levels of theft risk. The risk-based premium has encouraged Steve to purchase a vehicle with better anti-theft features. This prevented a high theft risk from entering the insurance pool, helping to manage overall level of risk in the community.



## Risk Factors

Our technical premiums are risk-rated so each policyholder pays a premium that reflects the likelihood of their need to claim. These calculations use risk factors that are attributes of either the customer, or the item being insured, that are statistically correlated with risk.

Using risk factors helps us to accurately estimate risk and calculate the premiums we should charge. We identify risk factors by breaking claims into groups based on our data and comparing the claims experience between the different groups.

A good example of this is the age of the driver for a car insurance policy. We can compare claims for younger drivers with those of more experienced drivers and see that younger drivers are on average 60 per cent more likely to be involved in an at-fault accident and need to make a claim. Therefore, age can be used as a risk factor when estimating risk and calculating premiums.

Historically, we have used quite broad risk factors, such as age groups of 10 years or more. Better data means that we can now replace these broad risk factors with more specific factors. This can be seen with car insurance where the 'under 25' bracket and the 'over 25' bracket has been broken down to year-by-year analysis. Instead of a steep drop in premiums previously experienced at age 25, age ratings now gradually decrease each year.

Risk factors used in home insurance premiums have also been improved. Premiums were traditionally priced on a postcode or suburb basis with all homes within that zone being assigned the same level of geographic risk. With improved risk models we can now price homes individually and take into account the differences of one home compared to the next.

The example below demonstrates this house-by-house analysis. Each colour signifies a different bushfire rating and therefore a different premium. In this case we've used proximity to bushland as one of many risk factors to estimate bushfire risk. You can see that homes closest to the bush generally receive the highest risk rating and homes further away receive progressively lower ratings. Individual risk rating means that red (high risk) homes can be quite close to orange (medium risk) and green (low risk) houses. This same individual rating across several risks covered by the policy is how two neighbours can potentially, and often do, have materially different premiums based on their individual risks.

There are a large number of factors taken into account when calculating risk and we're continually upgrading our estimates. The significant factors we use are disclosed to customers in the Premium, Excess and Discount (PED) guide available for most products on our websites.

**Figure 2 – Bushfire Risk Model**



### **Simplified Example – Risk factors**

After insuring Steve and Rebecca for three consecutive years we notice that, although both cars are the same, Rebecca's car has been stolen twice and Steve's only once. Our data identifies that Steve's vehicle is parked in a garage overnight whereas Rebecca's is parked on the street. This appears to make Rebecca's car twice as likely to be stolen.

Therefore we add a risk factor to our pricing model that includes consideration of where a vehicle is parked overnight. When the insurance premium renews, Steve's total premium is reduced to \$378.25 and Rebecca's increased to \$756.50 to reflect the fact Rebecca more likely to claim than Steve.

The same premium pool is collected but the new risk factor has changed how this is shared between Steve and Rebecca.



# Premium Breakdown – Home

To demonstrate how we build a home insurance premium, we've provided a breakdown of an example renewal below. We have used the 2011 and 2012 breakdown to demonstrate how premium can change year-on-year, due to updated pricing information.

This example is for a typical three bedroom home in regional Victoria. The policyholder has not made any claims in the past five years and the policy has remained unchanged – except for an automatic sum insured increase of 10 per cent. Although no information about the property, coverage or policyholder has changed, the premium has been increased due to several pricing changes. These changes are detailed in the explanatory notes.

## Case Study – A typical Victorian Home Building Premium Breakdown<sup>2</sup>

Premium Component	2011	2012	Explanatory Notes
Natural Hazard Claims (Including earthquake, hailstorm, bushfire and other natural hazards.)	\$138.11	\$203.66	This increase is due to the new premiums for earthquake and hailstorm. Premiums have increased following claims for the Moe Earthquake on 20 July 2012 and the Christmas Day hailstorm in Melbourne.
Working Peril Claims (Including theft, flash flood, fence cover, glass and other risks.)	\$75.05	\$103.82	Updated risk models for fire, theft and water damage have been added to the pricing engine. This has increased premiums by \$5 to \$10 for each component, mostly driven by inflation and higher repair costs.
Business Expenses (Including wages, administration, reinsurance and other expenses.)	\$60.97	\$62.45	Our expenses have remained steady, due to cost savings initiatives. This slight increase is driven by inflation.
Management (Including strategic price changes and tuning adjustments.)	-\$14.08	-\$22.63	A discount has been applied to increase the number of policies we attract and retain in this region as part of our business strategy.
Discounts (Including multi-policy discount, capping and other discounts.)	-\$50.06	-\$95.88	We have applied a multi-policy discount and a combined discount for having both home and contents on one policy. A capping discount of -\$20.32 has also been applied as the technical premium has increased since last year.
Base Premium	\$209.99	\$296.68	This is the subtotal of the premium components, prior to application of relevant taxes, levies and duties.
Fire Services Levy	\$67.20	\$94.93	The FSL has been applied at a rate of 32%. However FSL is being removed from insurance premiums in Victoria and will not apply upon next renewal.
GST	\$27.72	\$39.16	GST has been applied in addition to FSL.
Stamp Duty	\$30.49	\$43.07	Stamp Duty has been applied as the final step.
Total Premium	\$335.40	\$473.60	This is the total amount charged for the policy.

<sup>2</sup> Note: this premium has been calculated using our pricing engine. Due to commercial sensitivities, the premium components have been grouped into summary levels, although individual components have been separately calculated in the background.

# Premium Breakdown – Car

To demonstrate how we build a comprehensive car insurance premium, we've broken down an example quote for a new customer below. This quote is for a typical sedan with a driver aged 32 from Forbes, NSW.

## Case Study – A typical car insurance premium breakdown<sup>3</sup>

Premium Component	2013	Explanatory Notes
At-fault Risk (Including collisions, car park damage and other at-fault claims.)	\$304.32	As this car is insured in a regional town the risk of an at-fault collision is relatively low.
Not-at-fault Risks (Including collisions, storm, theft and other not-at-fault claims.)	\$421.35	This component is slightly higher than average due to the risk of animal collisions on regional roads.
Business Expenses (Including wages, administration, reinsurance and other expenses.)	\$94.43	The higher volume of car insurance claims means that a higher business expenses charge is applied as compared to home insurance.
Management	\$86.14	We have manually increased premiums in this region to meet business operating goals and maintain sustainable growth.
Discounts	-\$219.72	A no claims discount has been applied to recognise the customer's safe driving record.
Base Premium	\$686.52	This is the subtotal of all premium components, prior to application of relevant taxes, levies and duties.
ESL	\$6.87	In NSW a 1% Emergency Services Levy is collected.
GST	\$69.33	GST of 10% is charged in addition to ESL.
Stamp Duty	\$38.14	Finally, Stamp Duty of 5% is charged.
Total Premium	\$800.85	This is the final amount we ask the customer to pay.

<sup>3</sup> Note the premium was calculated using our Pricing Engine. Due to commercial sensitivities the premium components have been grouped into summary levels, although individual components have been separately calculated in the background.

# Appendix A – Additional Concepts

## Risk Concentration

Risk concentration is the insurance version of “don’t put all your eggs in one basket”. As natural disasters occur within a specific geographic area, insuring two assets close to each other is a higher risk than insuring two assets separated from each other.

For example, if we insured 100 homes all in one small town, there is a risk that a disaster could occur and all 100 homeowners would claim at the same time and the pool may run out of money. Alternatively, if we insured 20 homes across five different towns (still a total of 100 homes) and the same disaster occurred, then we would only have 20 claims. This difference in overall level of claims risk is called risk concentration.

For insurance to work it is important that there is a mix of different policyholders with different levels of risk. This reduces the chance of all policyholders claiming at the same time and ensures the pool is sustainable. Managing risk concentration and ensuring there is a spread of different risks is particularly important for home insurance. We adjust our premiums up or down to make sure we have a good mix of risks to avoid high levels of risk concentration.

## Risk Discrimination

Risk discrimination is where we look at actuarial or statistical data and other relevant factors, to identify the risk differences between two groups of policyholders. This allows us to more accurately forecast risk and deliver a risk-based premium that communicates risk.

Some of the most statistically reliable risk factors we use are the personal attributes of our policyholders, such as age and gender. The European Union recently passed a gender directive that banned risk discrimination based on gender and some have asked for similar restrictions to be applied in Australia.

While the gender directive has equalised insurance premiums between males and females, it has also removed the gender based risk factor from the market. Research from the Association of British Insurers estimates that the removal of risk discrimination based on gender in car insurance will lead to male drivers under the age of 25 experiencing the largest average decrease in premiums (up to 10 per cent) compared to female drivers in the same age group experiencing the largest average increase in premiums (of up to 25 per cent).<sup>4</sup>

Removing a reliable risk factor from a premium has three key impacts on an insurance pool:

1. The risk signal sent by that rating factor is removed. This can lead to moral hazard where policyholders are no longer financially rewarded for being low risk and, as a result, change their behaviour or choices. This can eventually increase claims frequencies and costs.
2. When low risk policyholders are asked to pay for high risk policyholders adverse selection occurs. This is where low risk policyholders decide not to take out insurance, leaving only high risk policyholders in the insurance pool.
3. Insurers become less certain about the accuracy of their risk estimates and add a safety buffer to calculations to protect against an unforeseen fluctuation in claims.

All of these impacts can lead to higher premiums for policyholders. Removing a reliable risk factor also diminishes the accuracy and fairness of insurance premium distribution. Therefore, we believe risk discrimination is a crucial aspect of our pricing process. We are actively engaged in the public debate about insurance risk discrimination.

4 The use of gender in insurance pricing, ABI Research Paper no 24, 2010, p. 57 available: [http://www.abi.org.uk/Publications/ABI\\_Publications\\_The\\_Use\\_of\\_Gender\\_in\\_Insurance\\_Pricing\\_Research\\_Paper\\_No\\_24\\_cc0.aspx](http://www.abi.org.uk/Publications/ABI_Publications_The_Use_of_Gender_in_Insurance_Pricing_Research_Paper_No_24_cc0.aspx)

### Simplified Example – Removal of risk discrimination

Rebecca is unhappy her premium has increased and succeeds in having a law passed that prevents insurers from considering a vehicle's garaged location as a risk factor. The following year an equalised insurance renewal premium is provided to Steve and Rebecca.

Steve receives an increased renewal of \$567.38 and notices that he is no longer being rewarded for parking his car in a garage overnight. He decides to save time each day and park his car in the driveway. This change in behaviour increases Steve's theft risk 50% and in the future, premiums will need to increase to cover this risk.

### Reinsurance

A simple definition of reinsurance is 'insurance for insurers'. Because it's impossible to perfectly calculate risk and determine the exact cost of future claims, insurers need to protect themselves against sudden jumps in claims costs. Those that don't protect themselves can quickly run out of money after a major disaster and become insolvent.

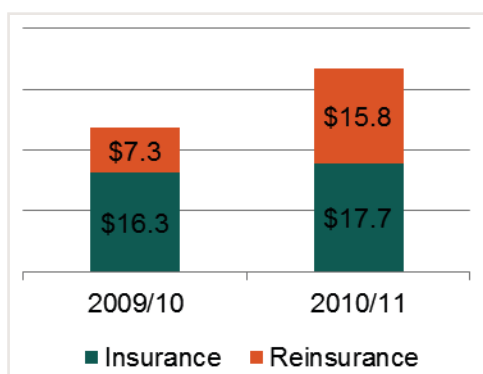
Insurers in Australia are required by law to hold a minimum level of protection against insolvency. This is referred to as prudential regulation. This is so consumers can be confident in the financial strength of their insurer. We meet (and exceed) this legal requirement by holding capital in reserve and purchasing reinsurance.

We purchase reinsurance against relatively rare natural disasters that exceed our risk estimates (e.g. a 1-in-500 year earthquake). A good example of reinsurance in action can be observed by comparing insurance claims data collected by the Australian Prudential Regulation Authority (APRA) in the 2009-10 financial year with the 2010-11 financial year.<sup>5</sup>

During 2009-10 the general insurance industry incurred a gross total of \$23.6 billion in claims. The following year several natural disasters struck including Cyclone Yasi, the Queensland floods and the Perth bushfires. These disasters led to a \$12.3 billion jump in claims.

Fortunately, reinsurance cover was in place and reinsurers paid \$15.8 billion of claims in 2010-11. This means despite a \$12.3 billion jump in gross claims, the net claims paid by insurers only increased \$1.4 billion.

**Figure 3 – General Insurance Claims**



Reinsurance shielded the Australian insurance industry from an additional \$10.9 billion of claims payments.

<sup>5</sup> APRA Insight, Issue Three, 2012, p.10, available: [http://www.apra.gov.au/Insight/Documents/Insight\\_issue3\\_2012\\_FINAL.pdf](http://www.apra.gov.au/Insight/Documents/Insight_issue3_2012_FINAL.pdf)

Following several costly natural disasters like Hurricane Sandy and the 2011 Japan Earthquake and Tsunami the cost of obtaining reinsurance has increased. Australia has also been reclassified as a higher risk country due to the natural disasters and reinsurance claims we have experienced.

Reinsurance premiums represent a sizeable component of our operating expenses due to the fact we are purchasing large amounts of cover. This means that any increase in reinsurance premiums directly and significantly impacts our operating costs, and therefore the premiums paid by our customers.

Suncorp's publication 'Reinsurance – hero or villain?' provides more information about reinsurance and can be downloaded from our website at: <http://www.suncorpgroup.com.au/media/public-submissions?year=2012>

### **Simplified Example – Reinsurance**

Although we've estimated the annual theft risk for Steve and Rebecca to be \$900, there's a possibility that both cars could be stolen as Steve is now parking in his driveway. This would lead to total claims of \$2,000. Rather than increase the insurance pool to \$2,000 and collect higher premiums, we decide to purchase reinsurance for claims costs between \$900 and \$2,000. This reinsurance cover costs us \$100.

This means that the insurance pool is now the original \$900 theft risk plus an additional \$100 to cover reinsurance expenses. We apply a premium increase of \$50 for each Steve and Rebecca to pay for reinsurance costs.

### **Pathway to Lower Premiums**

Home insurance premiums have been increasing in recent years and many Australians are looking to ease the cost of living by saving on their insurance. Lower premiums offer benefits to the broader community and we believe that policyholders, insurers and governments all share an interest in finding solutions.

Acknowledging the shared interest in lower premiums, it's important we work together to place downward price pressure on the three core components of an insurance premium: the technical premium (driven by claims and operating costs), base premium (driven by business operations and competition) and total premium (which includes taxes).

As discussed earlier, the largest component of insurance premiums is the technical premium which is primarily driven by claims related expenses. Reducing disaster risks will lead to fewer and less costly claims, which in turn will lead to lower insurance premiums.

Governments at the Federal, State and Local level have a key role to play in reducing risks in communities – either through improved land-use planning, stronger building codes or by investing in disaster mitigation. We continue to advocate for improved natural disaster risk management and greater investment in disaster mitigation across all levels of government.

A good example of the value of government led risk reduction can be observed in flood premiums. In Roma, average home insurance premiums for our customers are above \$3,000 primarily due to riverine flood risk. By comparison, nearby Charleville has a flood levee that substantially reduces flood risk and residents benefit from a more affordable average premium of around \$1,200. Additional flood mitigation work currently being undertaken in Charleville will further reduce premiums for many residents.

Governments can also reduce premiums by removing additional insurance taxes as recommended by the Henry Tax review.<sup>6</sup> Most states and territories apply stamp duty on insurance premiums in addition to GST, which can increase premiums between 5-11 per cent. Removing insurance taxes could quickly reduce premiums while also removing the 'tax on a tax' effect of applying one tax on top of another.

Individuals and communities can also bring about lower premiums by reducing their personal risks and minimising the chance they'll need to claim. This will translate into fewer overall claims and therefore a smaller insurance pool. This will lead to lower reinsurance premiums and lower insurance premiums over time.

The options selected on an insurance policy such as sum insured and excess can also influence the amount of risk we are insuring and therefore the premium. For example, increasing a home building excess from \$100 to \$500 translates into a lower premium. This is because we no longer need to cover the risk (and administration) of low cost claims such as broken window glass.

Finally, the insurance industry itself can reduce premiums by reducing business costs and operating more efficiently. In 2012, we announced \$275 million of simplification initiatives, like decommissioning 14 legacy computer systems. We expect these programs to deliver ongoing annual savings of \$265 million from financial year 2016 and allow us to operate a more efficient business.

Operating efficiently is important to a sustainable insurance pool. To improve efficiencies in car claims, we have significantly invested in the motor vehicle repair industry. Our Capital SMART joint venture is a specially designed car repair facility that uses its large scale, combined with leading-edge repair technology, to not only ensure quality repairs but also get our policyholders back on the road faster for a lower cost.

While there are a wide range of factors that influence insurance premiums, the pathway to cheaper premiums is to focus on reducing risk. Lower risk means lower costs which leads to lower premiums.

Suncorp's publication 'Risky Business' provides more information on the relationship between premiums and Natural Disaster Risk Management. It can be downloaded from our website at: <http://www.suncorpgroup.com.au/media/public-submissions?year=2013>

<sup>6</sup> See: Recommendation 79, Australia's Future Tax System, available: [http://taxreview.treasury.gov.au/content/finalreport.aspx?doc=html/publications/papers/final\\_report\\_part\\_1/chapter\\_12.htm](http://taxreview.treasury.gov.au/content/finalreport.aspx?doc=html/publications/papers/final_report_part_1/chapter_12.htm)

# Glossary of Terms

Term	Meaning
Actuarial	The statistical or mathematical analysis of data in order to forecast future claims frequencies and costs.
Adverse Selection	When a disproportionate amount of high risk policyholders join an insurance pool because the premium has been inaccurately calculated.
ESL	Emergency Services Levy as currently charged on insurance in New South Wales.
Event	The point in time when a peril causes loss to the insured. An event can also occur to a large number of claims that arise due to a natural disaster.
FSL	Fire Services Levy as currently charged on home insurance and certain other fire insurance policies in Victoria, but abolished from 1 July 2013.
Loading	A percentage based increase to a premium applied to produce business results or reflect increased levels of risk. For example, younger drivers may receive an age-based loading that increases their premiums.
Long Tail Products	An insurance product where the claim is received and handled a long time after the policy was initially issued. This can be several years such as in Workers Compensation insurance where medical recovery can take years.
Loss	Damage to an asset that results in a financial impact to the policyholder.
Moral Hazard	The risk that individuals increase their risk (or fail to reduce risk) because insurance cover removes the financial consequences of risky behaviour.
Natural Hazard	A weather or geological hazard that impacts a large number of policyholders such as a bushfire, flood or earthquake.
Peril	The cause of a claim or loss such as fire or theft.
Period of cover	The time during which an insurance contract is in force.
Price Signal	Discouraging high risk behaviours or assets through higher premiums and, conversely, encouraging low risk alternatives through lower premiums.
Prudential Regulation	Regulations imposed by government to ensure insurers charge high enough premiums and hold sufficient reserves to pay future claims and avoid insolvency.

Term	Meaning
Rating Factor	Attributes about an asset or policyholder such as age, claims history or address that statistically correlate with claim frequency or size.
Reinsurance	Insurance cover taken up by insurers to protect against a significant and unpredicted increases in claims cost.
Risk Concentration	Covering large amounts of similar risks can increase the probability of extreme loss when a natural disaster occurs.
Short Tail Products	An insurance product where the claim is received and finalised shortly after the policy is issued. This period of time is usually one to two years.



