



**ANCAP**

Crash testing for safety

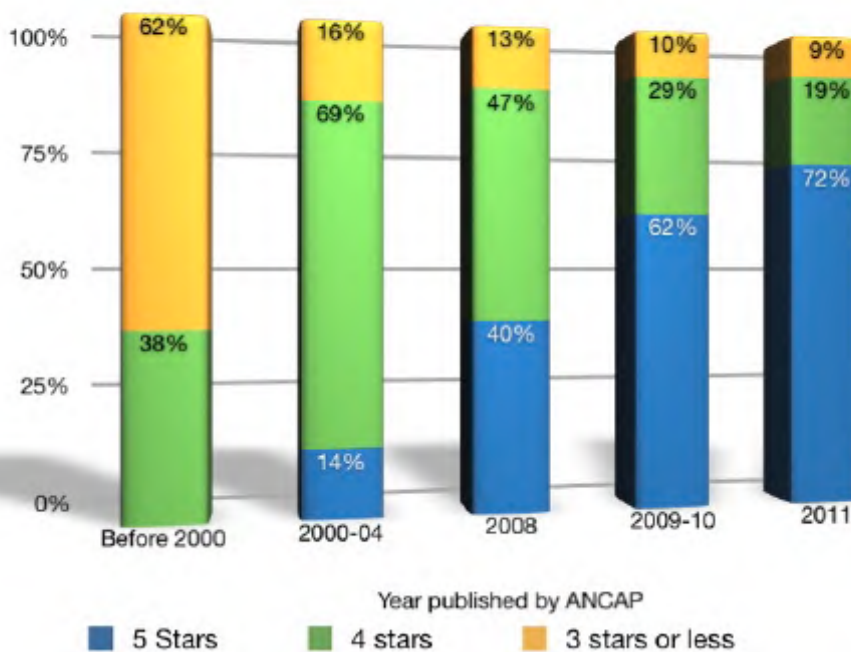
AUSTRALASIAN  
NEW CAR ASSESSMENT  
PROGRAM

# REAL-WORLD CRASH TRENDS & ANCAP RATINGS

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ANCAP Trends - Vehicle Models



## 5-star vehicles are available in all categories



Cars

SUVs

Commercials

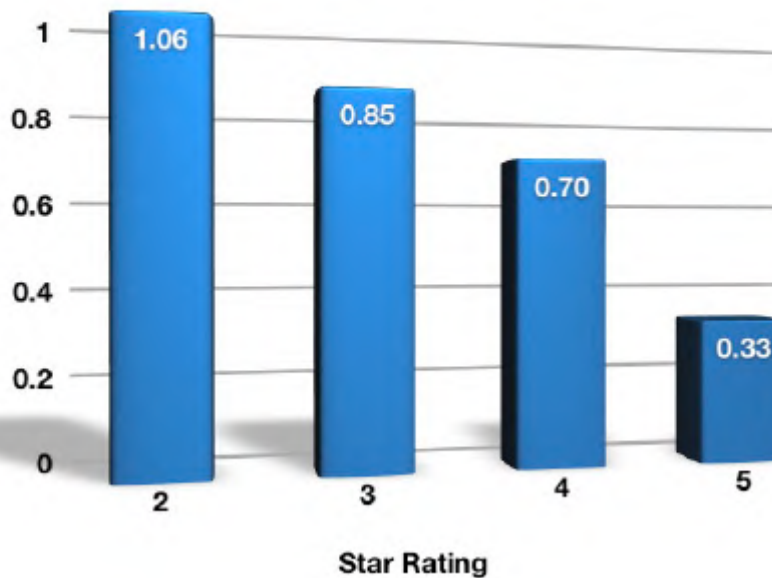
## FLEET PURCHASING POLICIES

- From July 2011 all cars purchased by the Australian government must have a 5-star ANCAP rating and all light commercial vehicles must have at least a 4-star rating (no exemptions!)
- BHP Billiton recently announced a global 5-star vehicle policy



### Relative Risk of Fatal Injury

Based on Folksam 2010 (Europe)



## Tracking model crashworthiness

- Used Car Safety Ratings include an estimate of the risk of serious injury to the driver in a Police-reported crash
- Injury risk is expressed as "crashworthiness": **the number of seriously injured drivers per 100 reported crashes**. Takes into account influencing factors such as age of driver
- UCSR are available for vehicle models built from the mid-1980s to 2010 (the limit of available crash data)
- ANCAP commenced crash testing in 1992. Ratings out of 5 stars are available for new models from 1999 (Euro NCAP method)
- Estimated star ratings can be calculated for models released between 1995 and 1999 based on the offset crash test results

## Tracking model crashworthiness



- Over the past 15 years most models have improved their ANCAP star rating
- USCR scores are available for these models and so the effect of a change in star rating can be evaluated
- Method:
  - Identify model changes (sometimes names change)
  - Determine ANCAP star rating and UCSR crashworthiness rating
  - For models rated prior to 1999, estimate star rating from offset test score (nearly all pre-1999 models are 3 stars or less because the offset test score was less than 8.5 out of 16)
  - Calculate the change in crashworthiness for the improvements in star rating

## Tracking model crashworthiness

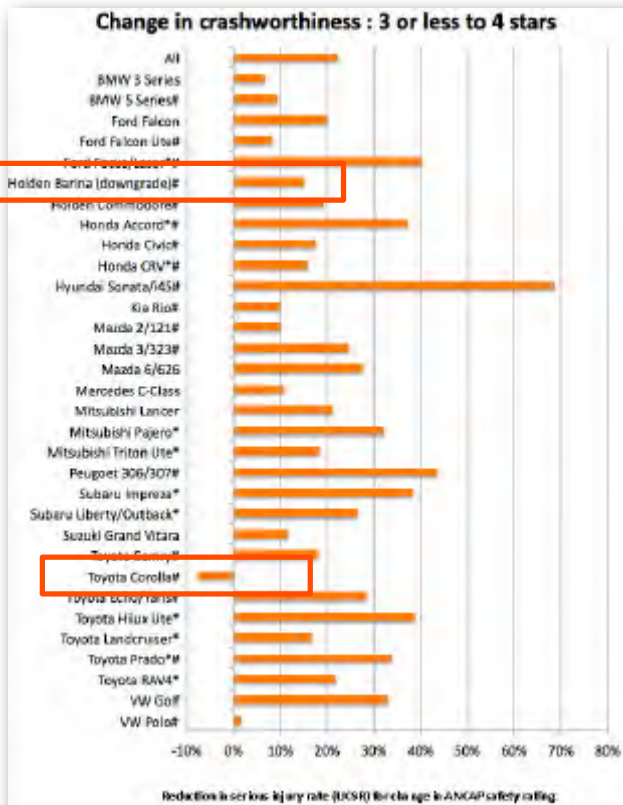


- 35 models could be tracked in this way

	YEAR RANGE 1	ANCAP 1	UCSR 1	YEAR RANGE 2	ANCAP 2	UCSR 2	YEAR RANGE 3	ANCAP 3	UCSR 3
BMW 3 Series	92-98	3	3.41	99-06	4	3.18	05-10	5	1.51
BMW 5 Series#	96-03	3	2.25	04-10	4	2.04			
Ford Falcon	98-02	3	3.27	03-07	4	2.62	08-10	5	1.38
Ford Falcon Ute#	00-02	3	2.57	03-08	4	2.36			
Ford Focus/Laser*#	95-97	2	4.9	02-05	4	2.92			
Holden Barina (downgrade)#	05-10	2	4.13	01-06	4	3.51			
Holden Commodore#	97-02	3	3.38	02-07	4	2.73			

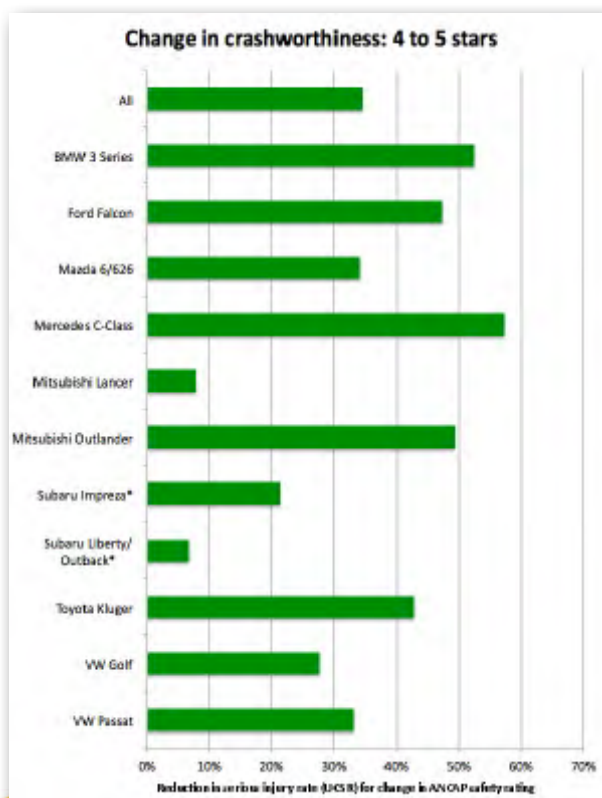
(Extract from appendix to paper)

## 3 stars or less to 4 stars



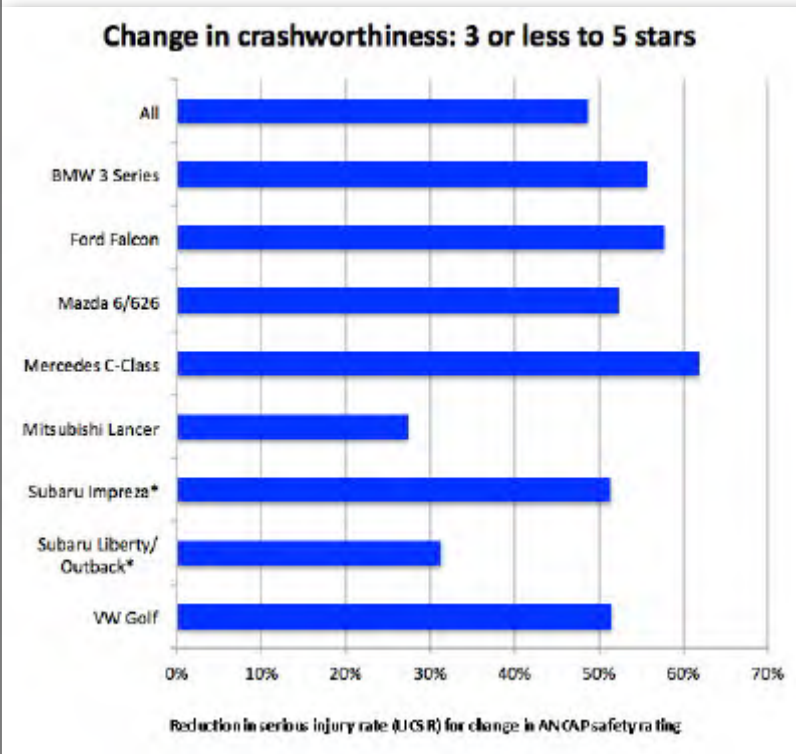
- 32 models
- Average UCSR improvement 22%
- Corolla only model that got worse
- Barina star rating dropped and so did UCSR

## 4 stars to 5 stars




- 11 models
- Average UCSR improvement 35%

# 3 stars or less to 5 stars




- 8 models
- Average UCSR improvement 49%

# Examples - Ford Falcon




★★★★★


**Frontal Offset Driver**



**Frontal Offset Passenger**




**Side Impact Driver**




FALCON01

UCSR 3.27




20%




★★★★★


**Frontal Offset Driver**



**Frontal Offset Passenger**




**Side Impact Driver**




FALCON03

UCSR 2.2




★★★★★


**Frontal Offset Driver**



**Frontal Offset Passenger**




**Side Impact & Pole Driver**



FALCON08

UCSR 1.38



47%

# Examples - Mazda 6/626



UCSR 3.23



UCSR 2.34



UCSR 1.54

# Examples - Hyundai Sonata/i45



UCSR 4.21



UCSR 1.32

?



UCSR?

## Examples - BMW 3 Series



UCSR 3.41



UCSR 3.18



UCSR 1.51



## Conclusions

- Clear reduction in the risk of serious injury to the driver each time that a model improves its ANCAP star rating.
- Average improvements are:
  - 22% when a model improves from 3 stars or less to 4 stars
  - 35% when a model improves from 4 stars to 5 stars
  - 49% when a model improves from 3 stars or less stars to 5 stars
- In the past few years many models have improved to a 5 star ANCAP rating. It will be several years before the UCSR program gathers sufficient real-world crash data to determine reliable crashworthiness ratings for these models.
- Based on the popularity of 5-star models a remarkable reduction in serious injury risk can be expected from these newer models.





**ANCAP**  
Safety ★★★★★

Accept nothing less.

