

# Evaluating Vehicle PSI-01-09 Technologies – Electronic Stability Control

## USING AUSTRALIAN USED CAR SAFETY RATINGS DATA

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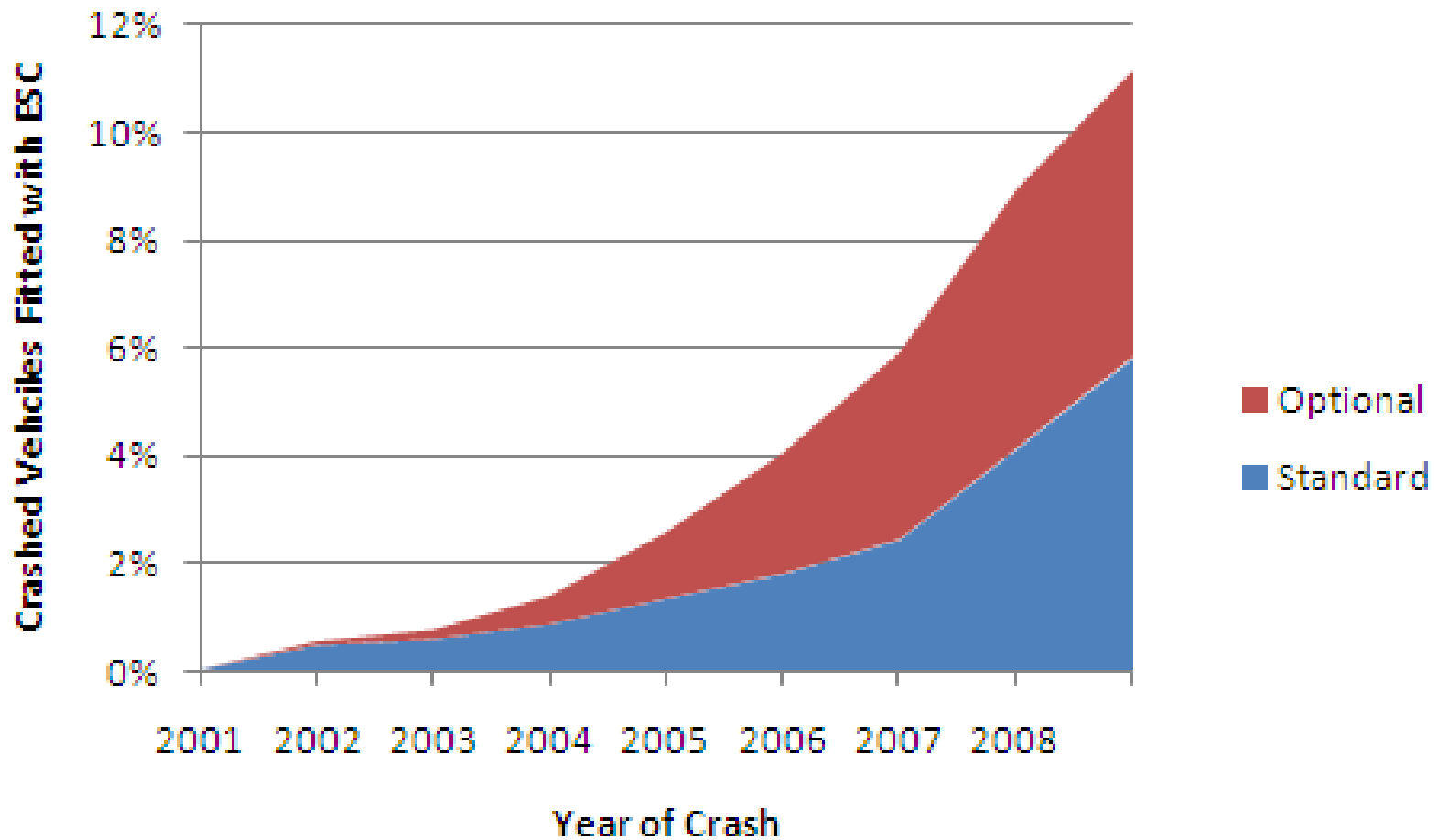
# What is UCSR

- Police reported crash data from 5 Australian states + New Zealand
- Data for crashes from 2001-2008 (for this study)
- 1,984,523 vehicles
- Includes VINs for crashed vehicles

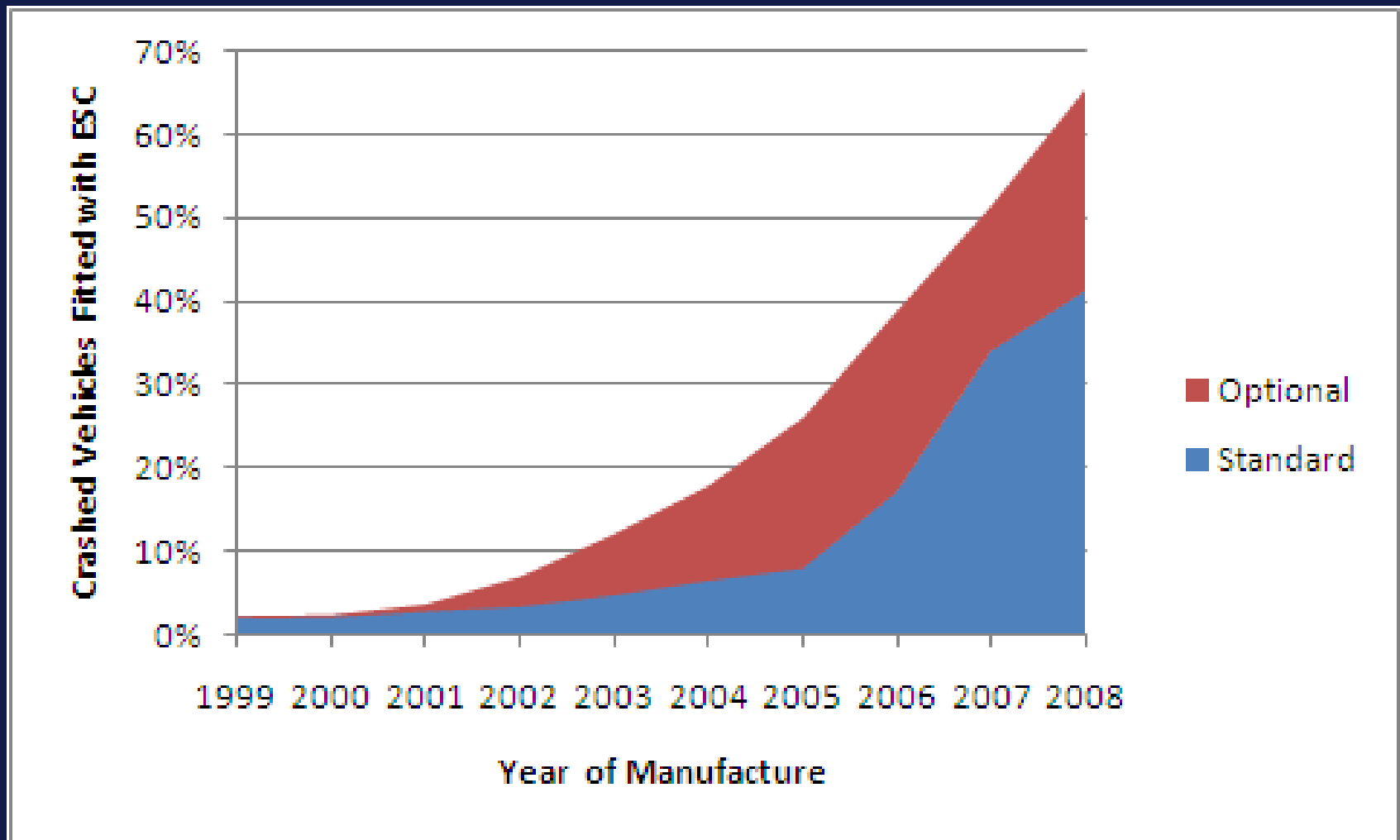
# Project Aims

- Evaluate the effectiveness of ESC in preventing crashes in NZ and Australia
- Validate results of 2008 study
- Estimate effectiveness for
  - Specific types of crashes
  - Serious injury crashes

# ESC by year of crash



# ESC by year of manufacture



# Data

- 2001-2008 crash data (3 extra years)
- Sample of data available for analysis:
  - 2007: 221,595 (7,699 with ESC)
  - 2010: 466,795 (27,252 with ESC)
- Range of ESC-fitted vehicles
  - 2007: 90 different models
  - 2010: 175 different models

# Methodology

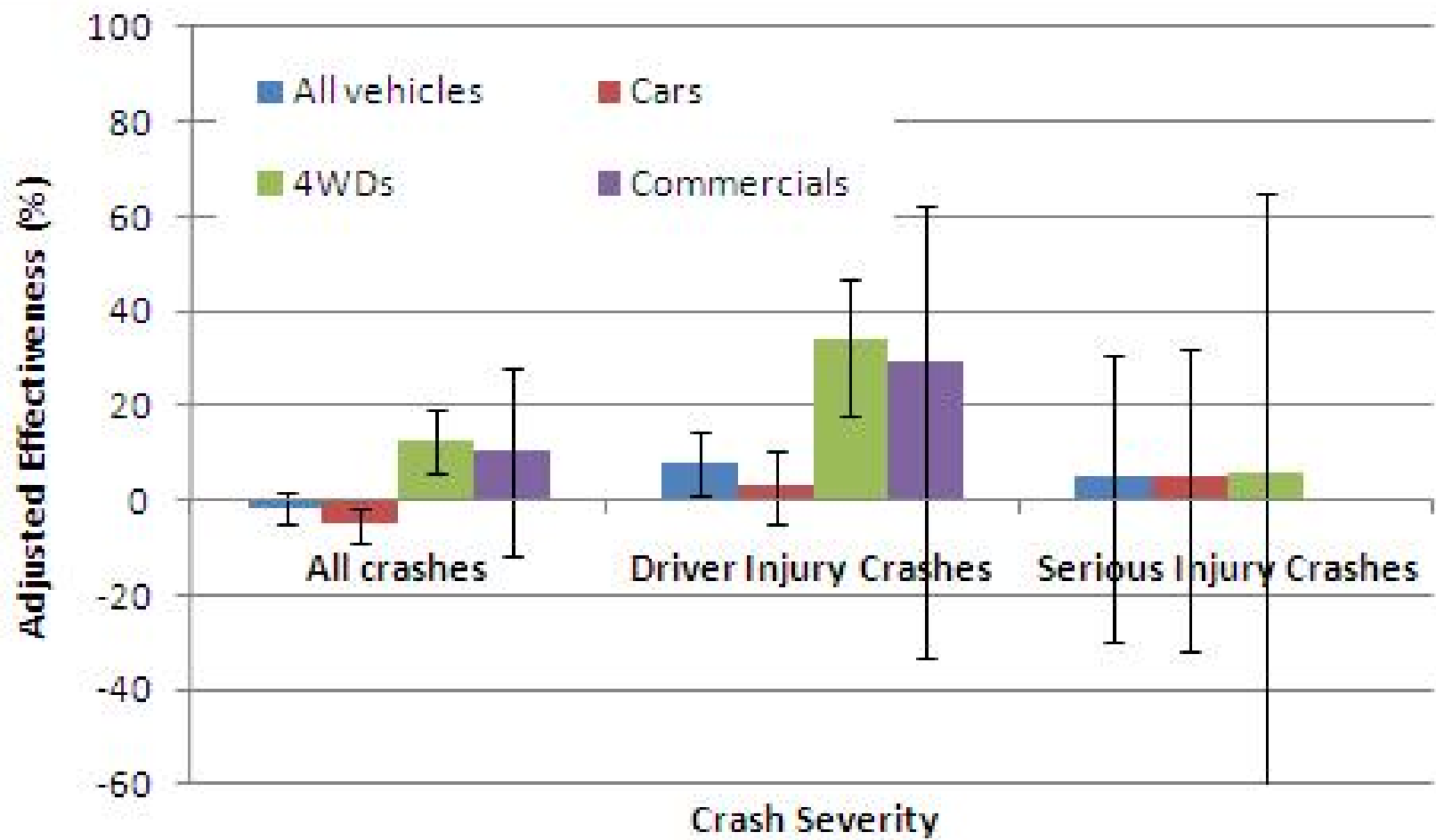
- Rear end impacts used to Induce exposure
- Poisson Regression
- Improved matching of treated vehicles to control groups
  - 2070: 16 treatment-control pairs
  - 2010: 64 treatment-control pairs
- Controlling for confounders

# Results

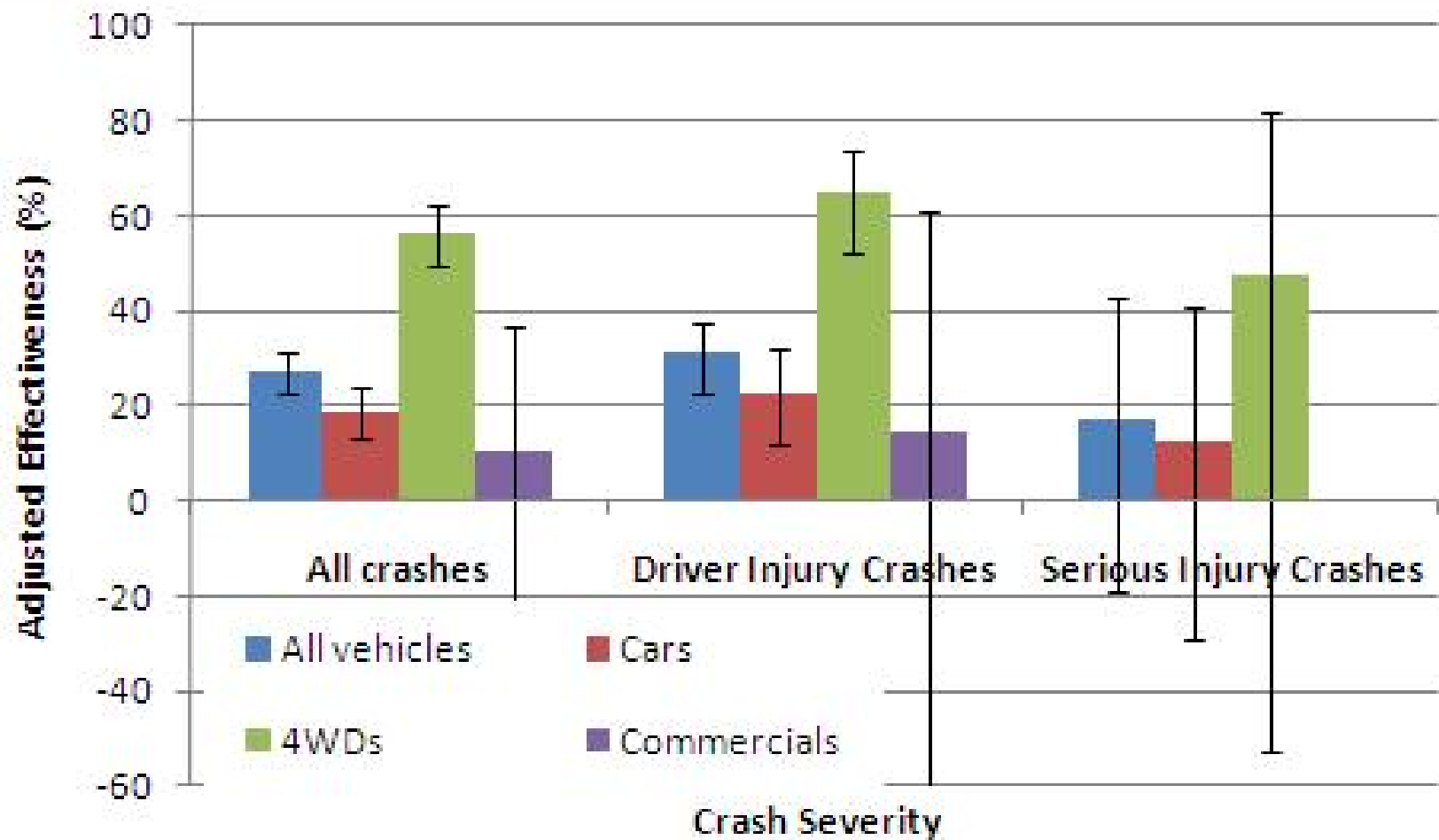
- A Broader range of results reported
  - Vehicle Type:  
Cars, 4WDs & Commercials
  - Crash Type:  
MVA + head on + side impact  
SVA + rollover  
Road surface (Wet / dry)  
Crash location (Metro / Rural)
  - Crash Severity:  
All (including PDO), driver injury & Serious Crashes



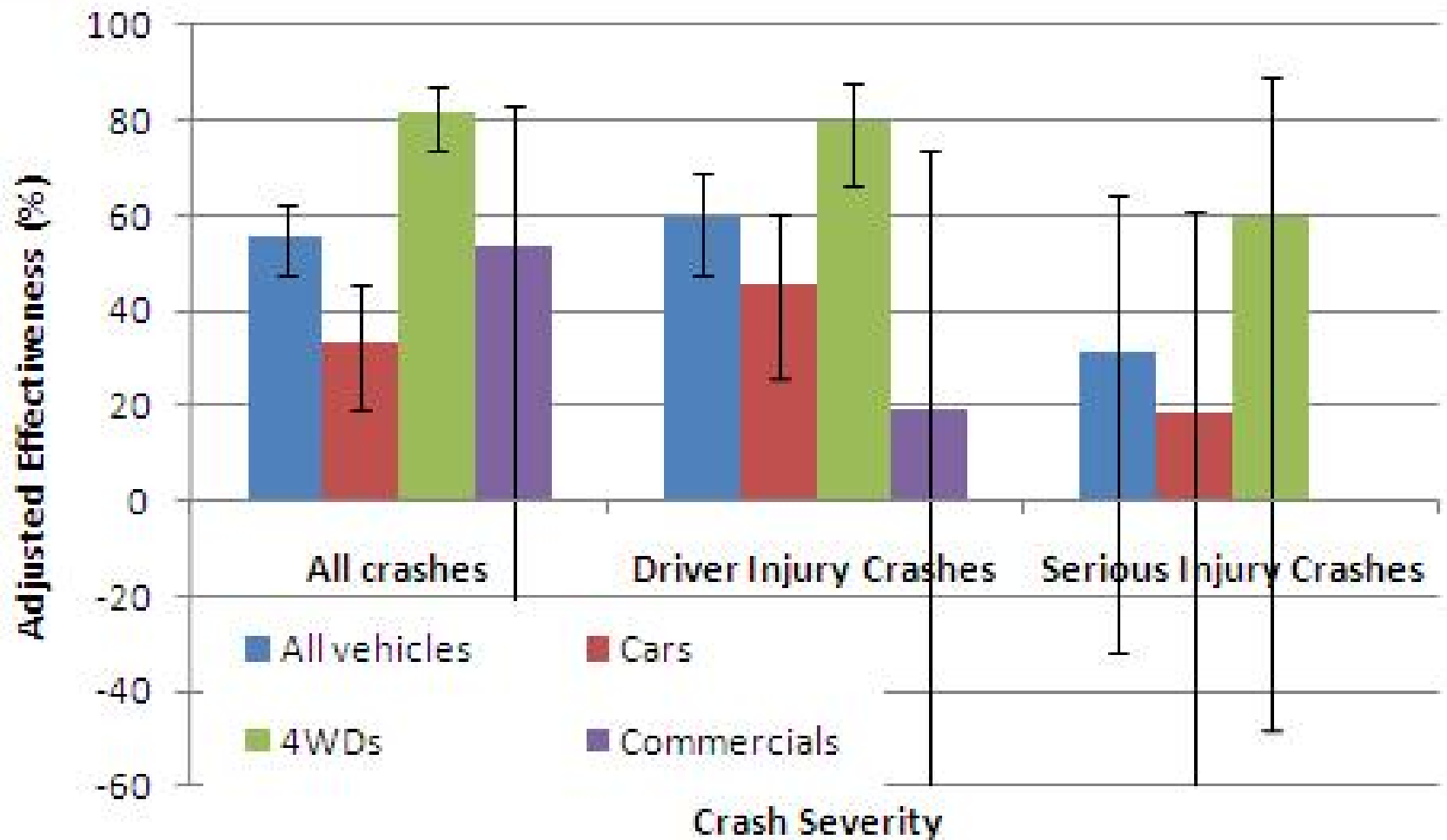
# Overall Effectiveness



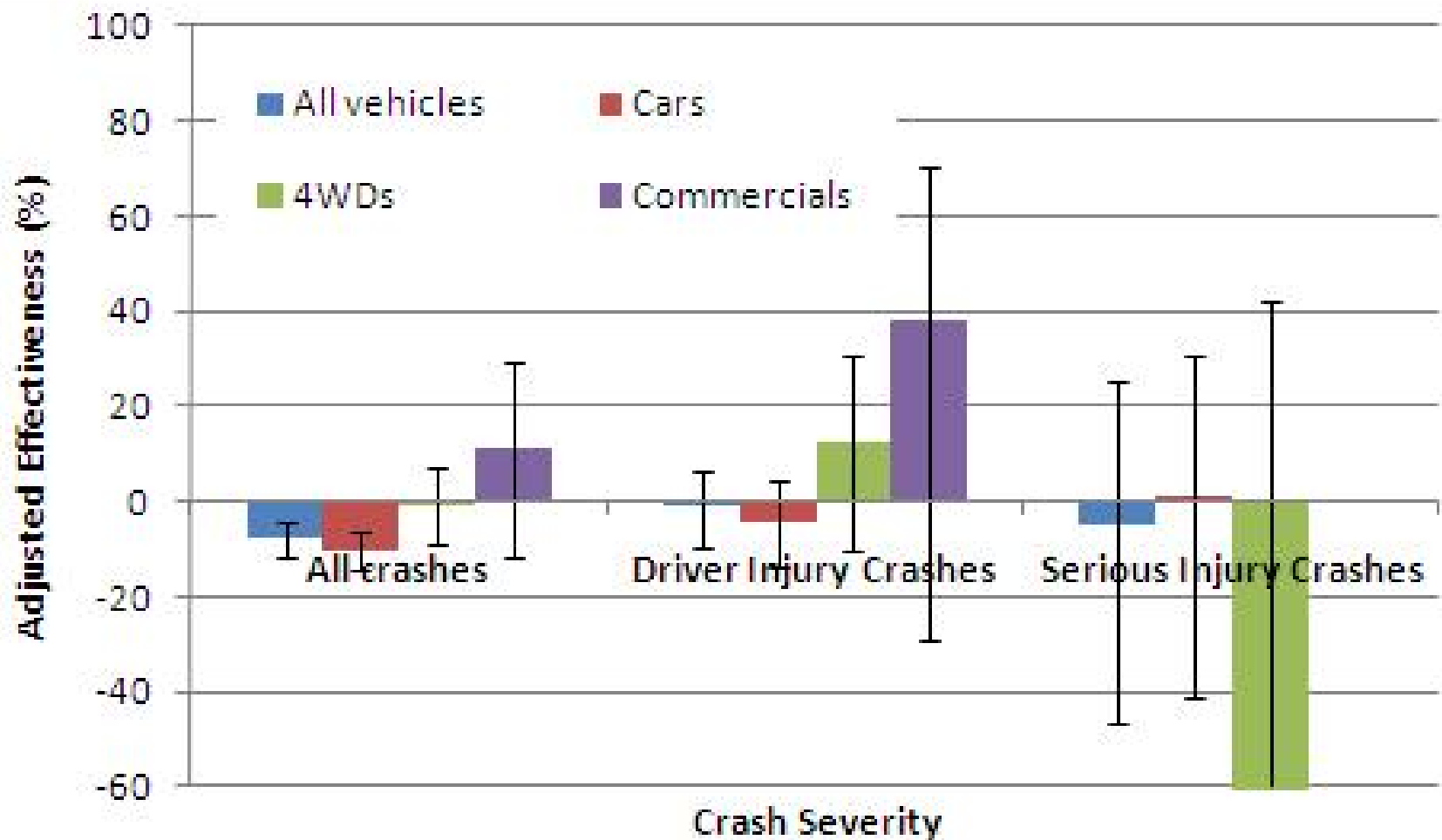
# Single Vehicle Crashes



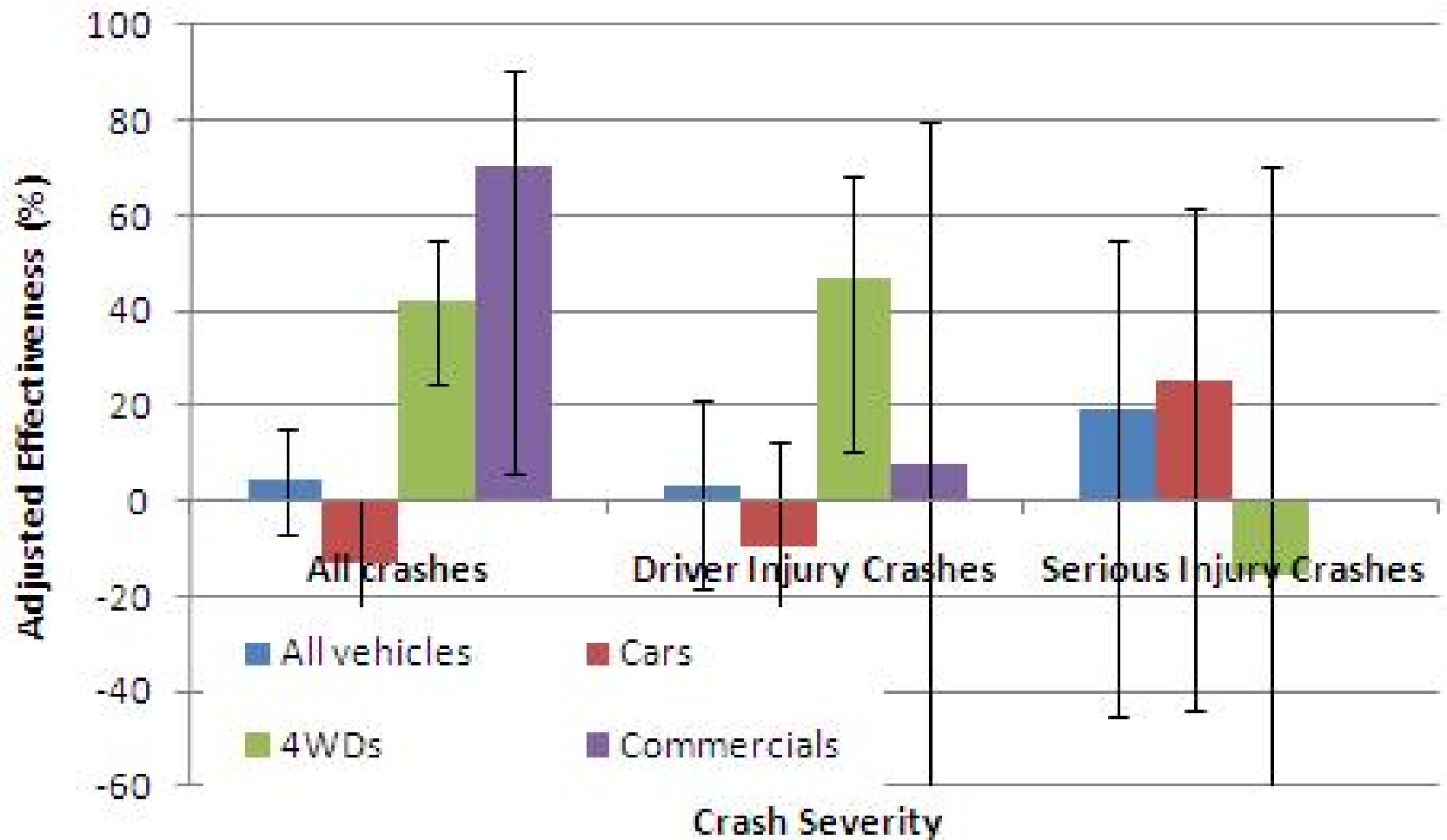
# Rollover Crashes



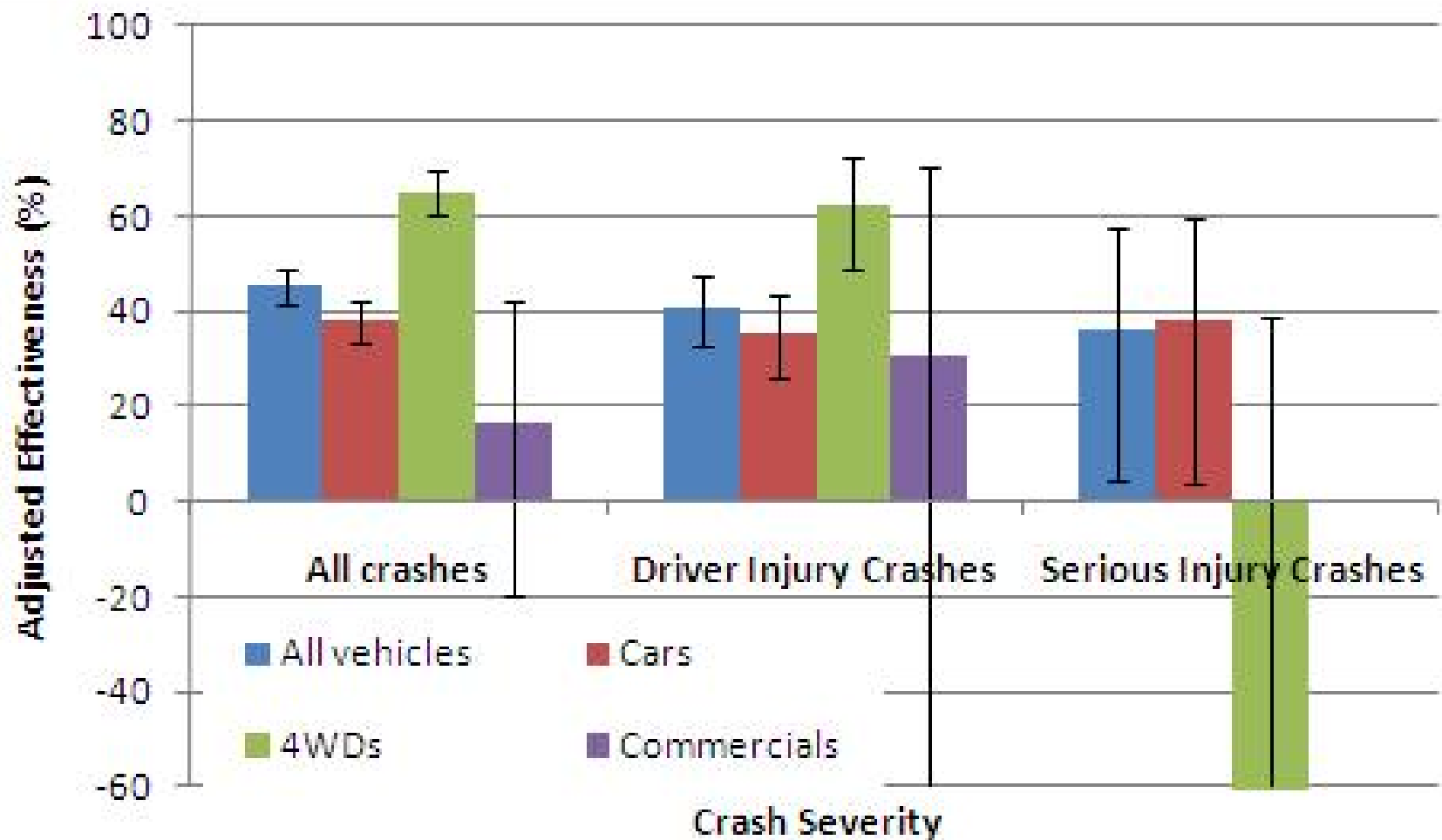
# Multiple Vehicle Crashes



# Head On Crashes



# Crashes in Rural Areas



# Discussion

- Controlling for confounding factors
  - Secondary Safety
  - Driver characteristics
- Single Vehicle Crashes:
  - Effectiveness for serious injury crashes lower than for all injury crashes – why?
- Risk Compensation effect?