

THE EFFECT OF GRADUATED DRIVER LICENSING ON 18-YEAR-OLDS IN FLORIDA, MICHIGAN AND MARYLAND

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Background

- Mixed findings on the effect of GDL on 18-year-old drivers' crash rates
- Natural experiment: State differences in the age GDL applies
 - Maryland: GDL applies to all ages
 - Most other states: GDL applies < 18

Aims

1. To examine the effects of GDL on 18-year-old driver crash rates in Florida, Michigan and Maryland
2. Understand potential mechanism responsible for any increase in 18-year-old driver crash rates

Method

- Single State Interrupted Time Series
- Outcomes:
 - 18-year-old drivers' monthly
 - Fatal and disabling injury crash rates per capita
 - Non disabling injury crash rates per capita
 - Property damage only crash rates per capita
- Covariates
 - Adult drivers' crash rates, Gas prices

Data Sources

- Crash Data:
 - CMISST State Crash Databases
- GDL Laws:
 - Insurance Institute for Highway Safety
 - State's Department of Motor Vehicles
- Population data: U.S. Census Bureau
- Gas Prices: U.S. Energy Information Admin.

Study Sample

FL



MI



MD



Percentage change in 18-year-old driver crash rates per capita

State	GDL Laws	Percentage Change in		
		Fatal and Disabling Injury Crashes	Non-disabling Injury Crashes	Possible Injury and PDO* Crashes
Florida	July 1996	3.0	0.7	-
	October 2000	-5.7	-4.1	-
Michigan	April 1997	-0.2	0.1	3.6
Maryland	July 1999	-9.0	-1.3	0.4
	October 2005	-4.5	-4.0	-6.9

*PDO = Property damage only crashes

Interpretation

- Where GDL applies to drivers < 18 years:
 - Crash rates increased in MI, unchanged in FL
- Where GDL applies to drivers of all ages:
 - Crash rates declined in MD
- Mechanism responsible for increased crash rates in MI may be delayed licensure
- Public health impact of GDL on 18-year-old drivers crashes is limited

Strengths and Limitations

- Natural, but not controlled experiments
- Based on cross-sectional crash rates per capita
- Did not use licensure data

Next Steps

- Replicate analyses using crash rates per licensed driver
- Survival analysis using licensure and crash data