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Does Diesel Price Matter?

Estimate the elasticities of trucking behaviors
with respect to fuel price

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Research Question:

How do truckers respond to changes in diesel price?

- Drive less?
- Choose better fuel economy?
- Ship more efficiently?
(ton-miles/gallon)

Data Source:

- Vehicle Inventory and Use Survey (1977-2002)
- U.S. Energy Information Administration

Method:

- Baseline OLS Estimation
- Instrumental Variable Estimation
 - IV: Average diesel price in non-neighboring states

Yes, diesel price affects VMT!

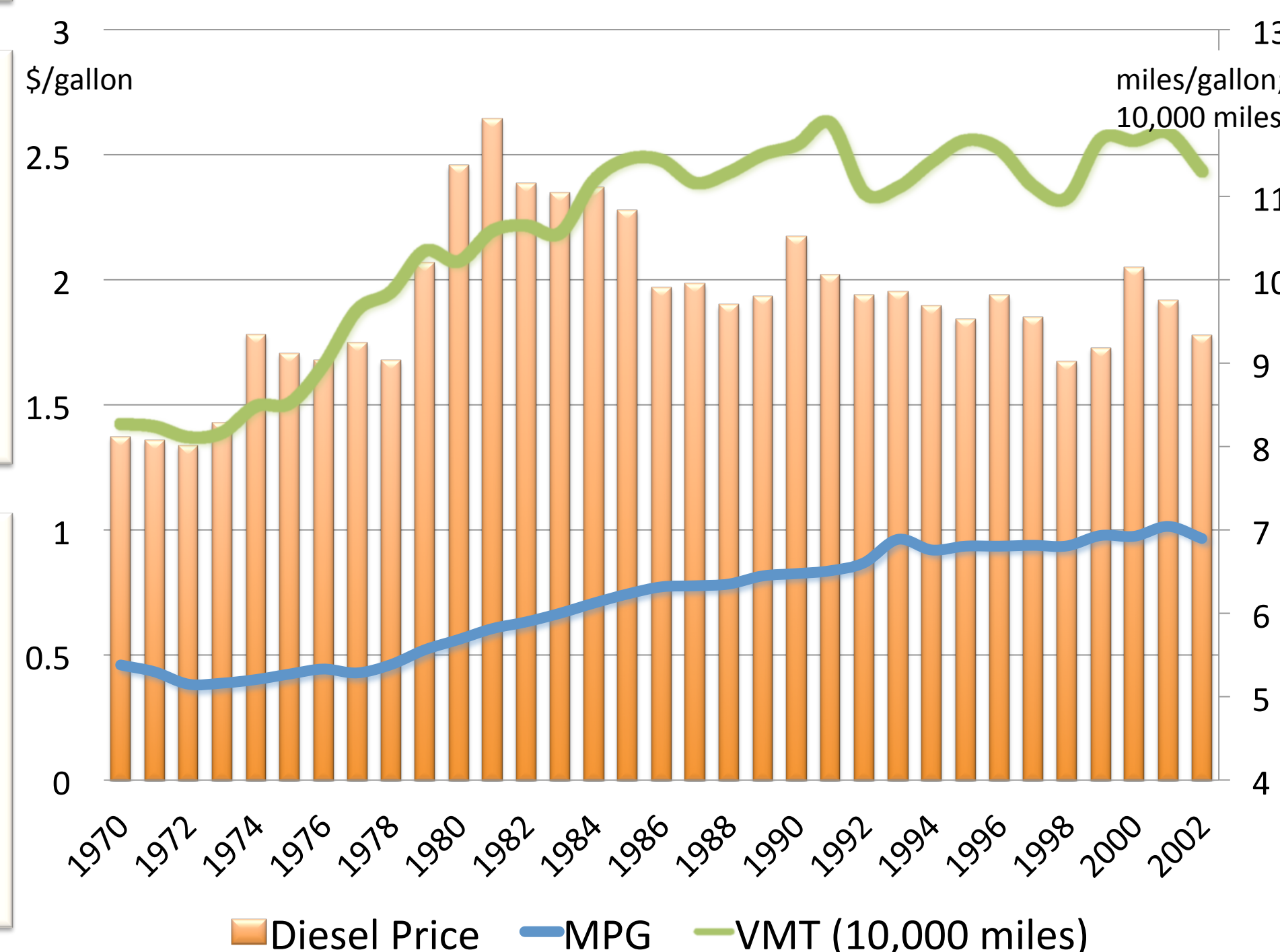
10% increase in diesel fuel price →

- 5.4% reduction in vehicle miles traveled (VMT) for single-unit trucks,
- 0.9% increase in VMT for truck tractors.

No, diesel price does not affect MPG!

- Truckers' choice of fuel economy responds little to fluctuation in fuel price.
- Shipping efficiency appears to be negatively correlated with the diesel fuel price.

VMT, MPG and diesel price



Dpt. Variables	log(VMT)	log(MPG)	log(Ship.Eff.)
Elasticities	-0.54**	0.010	-0.75***
(R. Std. Err.)	(0.26)	(0.12)	(0.23)
HST × price	0.13	0.087	0.55***
TT × price	0.63***	-0.028	0.24
Truck char.	Yes	No	Yes
Business char.	Yes	Yes	Yes
2-way FE	Yes	Yes	Yes
R ²	0.47	0.23	0.48
No. of obs.	133,494	133,494	121216

Note: HST-heavy single unit trucks; TT-truck tractors; all estimations apply IV method; ***p<0.01, **p<0.05, *p<0.1