

Dynamic Documents with Stata and Markdown

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Let us read the fuel efficiency data that is shipped with Stata

```
. sysuse auto, clear  
(1978 Automobile Data)
```

To study how fuel efficiency depends on weight it is useful to transform the dependent variable from “miles per gallon” to “gallons per 100 miles”

```
. gen gphm = 100/mpg
```

We then obtain a more linear relationship

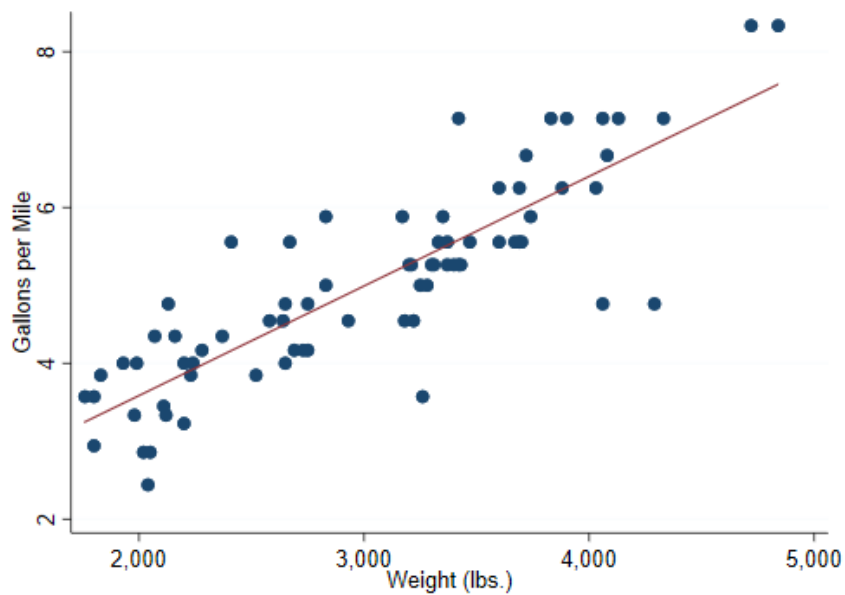


Figure 1: Fuel Efficiency

which was plotted using the commands

```

. twoway scatter gphm weight || lfit gphm weight ///
> , ytitle(Gallons per Mile) legend(off)
. graph export auto.png, width(500) replace
(file auto.png written in PNG format)

```

The regression equation estimated by OLS is

```

. regress gphm weight

```

Source	SS	df	MS	Number of obs	=	74
Model	87.2964969	1	87.2964969	F(1, 72)	=	194.71
Residual	32.2797639	72	.448330054	Prob > F	=	0.0000
				R-squared	=	0.7300
				Adj R-squared	=	0.7263
Total	119.576261	73	1.63803097	Root MSE	=	.66957

gphm	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
weight	.001407	.0001008	13.95	0.000	.001206 .0016081
_cons	.7707669	.3142571	2.45	0.017	.1443069 1.397227

Thus, a car that weights 1,000 lbs more than another requires on average an extra 1.4 gallons to travel 100 miles.

That's all for now!