



Rockets and feathers: does gas follow oil up faster than down?

Run each command in Stata, fill in what you find, and watch the pattern emerge — the pump shoots up like a rocket but drifts down like a feather.

STEP 1 Get the data and line it up

Grab both weekly series and move each Friday's oil onto the following Monday, so every row is one Monday's gas beside the PRIOR Friday's oil. Declaring the data weekly lets L. mean "last week":

```
import fred GASREGW WCOILWTICO, clear†
gen monday = daten if dow(daten)==1
replace monday = daten + 3 if dow(daten)==5
collapse (mean) GASREGW WCOILWTICO, by(monday)
rename monday daten
tsset daten, delta(7)
```

How many weekly rows do you end up with? _____

STEP 2 Weekly changes and a rise indicator

Each price becomes its log change from the week before (a close stand-in for the percent change). oil_up keeps the oil change only when oil rose:

```
gen gas_pc = ln(GASREGW) - ln(L.GASREGW)
gen oil_pc = ln(WCOILWTICO) - ln(L.WCOILWTICO)
gen oil_up = oil_pc*(oil_pc>0)
```

STEP 3 Run one regression

L(0/7) is this week's oil plus its last seven weeks, in one stroke; oil_up lets rises differ from falls:

```
regress gas_pc L(0/7).oil_pc L(0/7).oil_up
```

STEP 4 Cumulative pass-through

The cumulative response is the coefficients added up. Get it on impact and after eight weeks, for a rise and a fall; then fill in the table:

```
lincom oil_pc + oil_up // week 1, a rise
lincom oil_pc // week 1, a fall
* week 8: add L. through L7. of both (oil_up too for a rise)
```

Weeks after the move	After a RISE (%)	After a FALL (%)
Week 1 (impact)		
Week 8 (long run)		

What do you notice?

1. On impact (week 1), does the pump move more after an oil rise or an oil fall?

2. By week 6, has the gap between the rise and fall paths mostly closed?

3. Is "rockets and feathers" a difference in speed, or a permanent difference — and what tells you?

4. Long-run pass-through is about a half, not one-for-one — what else is in the price at the pump?

† Step 1 needs a free FRED API key (set up once): get a key at fredaccount.stlouisfed.org/apikeys, then type in Stata:
set fredkey YOUR_KEY, permanently (import fred requires Stata 15.1 or later.)