

# Equal Spacing and Amplitude Modulated Estimators in Stata<sup>1</sup>

Deepa Datta and Wenxin Du

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## Time Series Data

### 1. To implement the Equal Spacing estimator:

Set the data to time series, run the regression using newey2:

```
tsset time1
newey2 y x1 x2, lag(m) force
```

The coefficient will be estimated using only the observations for which y, x1, x2, etc are **all** observed. The standard errors will be the Equal Spacing estimates.

### 2. To implement the Amplitude Modulated estimator:

Create a dummy panel variable, set the data to panel, and then use newey2 or ivreg2:

```
gen panel1=1
xtset panel1 time1
```

Then run any one of these three:

```
newey2 y x, lag(m) force
ivreg2 y x, bw(m+1) robust small
xtivreg2 y x, bw(m+1) robust small
```

This will usually work. However, if there are any lags which are unobserved (i.e., you never have observations that are 3 days apart, so you're missing your third lag), this will give the error "no observations". We don't have an ado file to fix this yet, but we know from theory that we should be able to run the estimator even when some lags are missing.<sup>2</sup> In general, ivreg2 and xtivreg2 are more flexible than newey2 and also run faster.

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<sup>1</sup> Note: The views in this material are solely the responsibility of the author(s) and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or other members of its staff.

<sup>2</sup> We have Matlab code for ES and AM for time series, but not for panel regression. The Matlab code works when lags are missing, and has an option for automatic bandwidth selection.