

5. Tests for Autocorrelation

Tests for Autocorrelation

```
. tsset id  
      time variable:  id, 1 to 200  
. dwstat
```

```
Durbin-Watson d-statistic( 3, 200) = 1.93992
```

Tests for Model Specification

A model specification error can occur when one or more **relevant variables are omitted** from the model or one or more **irrelevant variables are included** in the model.

Tests for Model Specification

There are several methods to detect specification errors.

The **linktest** command performs a model specification **link test** for single-equation models.

Tests for Model Specification

. Linktest

Source	SS	df	MS	Number of obs = 200		
Model	8005.11739	2	4002.55869	F(2, 197)	=	79.86
Residual	9873.75761	197	50.120597	Prob > F	=	0.0000
Total	17878.875	199	89.843593	R-squared	=	0.4477
				Adj R-squared	=	0.4421
				Root MSE	=	7.0796

write	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
_hat	2.807497	1.052071	2.67	0.008	.7327302	4.882264
_hatsq	-.0170281	.0098827	-1.72	0.086	-.0365176	.0024615
_cons	-47.29516	27.77544	-1.70	0.090	-102.0705	7.480201

Tests for Model Specification

The `ovtest` command performs a regression specification error test (RESET) for omitted variables.

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```
. ovtest
```

```
Ramsey RESET test using powers of the fitted values  
of write
```

```
Ho: model has no omitted variables
```

```
F(3, 194) = 1.95
```

```
Prob > F = 0.1233
```


Tests for Model Specification

Summary of Tests for Model Specification

- linktest** performs a link test for model specification.
- ovtest** performs regression specification error test (RESET) for omitted variables.