

Forecasting Box Office Revenues: *Working with comparable datasets*

```
. use "movierevs v6.dta"
```

```
. drop if wk1==. | wk2==. | wk3==. | wk4==. | wk5==. | wk6==.  
(6,896 observations deleted)
```

```
. eststo clear
```

```
. reg rtotgross wk1
```

Source	SS	df	MS	Number of obs	=	5,187
Model	20316617.4	1	20316617.4	F(1, 5185)	=	15840.08
Residual	6650323.66	5,185	1282.60823	Prob > F	=	0.0000
				R-squared	=	0.7534
				Adj R-squared	=	0.7533
Total	26,966,941	5,186	5199.95007	Root MSE	=	35.814

rtotgross	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
wk1	2.304541	.0183107	125.86	0.000	2.268644	2.340438
_cons	9.019514	.5698397	15.83	0.000	7.902388	10.13664

```
. eststo  
(est1 stored)
```

```
reg rtotgross wk2  
. eststo  
(est2 stored)
```

```
. reg rtotgross wk3  
. eststo  
(est3 stored)
```

```
. reg rtotgross wk4  
. eststo  
(est4 stored)
```

```
. reg rtotgross wk5  
. eststo  
(est5 stored)
```

```
. reg rtotgross wk6  
. eststo  
(est6 stored)
```

```
. esttab, r2 scalar (rss mss rmse) compress
```

	(1)	(2)	(3)	(4)	(5)	(6)
	rtotgross	rtotgross	rtotgross	rtotgross	rtotgross	rtotgross
wk1	2.305*** (125.86)					
wk2		4.514*** (194.61)				
wk3			7.213*** (209.57)			
wk4				10.22*** (175.45)		
wk5					13.24*** (140.65)	
wk6						15.00*** (105.33)
_cons	9.020*** (15.83)	2.528*** (6.20)	0.918* (2.38)	3.331*** (7.48)	8.405*** (16.10)	15.43*** (24.61)
N	5187	5187	5187	5187	5187	5187
R-sq	0.753	0.880	0.894	0.856	0.792	0.681
rss(SSR)	6,650,324	3,247,282	2,847,498	3,887,398	5,600,260	8,589,412
mss(SSE)	20,316,617	23,719,659	24,119,443	23,079,543	21,366,682	18,377,529
rmse	35.81	25.03	23.43	27.38	32.86	40.70

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

But Wait! There's a much simpler way to find the best fitting SLR model! You don't have to run all those regressions! Just look at some correlations.

Since $R^2 = \rho_{xy}^2$, just compute the correlations between *rtotgross* and the different weekly revs (*wk1*, *wk2*, ...)... and see which week is most highly correlated with *rtotgross*.

```
. corr rtotgross wk1-wk6
(obs=5,187)
```

	rtotgr~s	wk1	wk2	wk3	wk4	wk5	wk6
rtotgross	1.0000						
wk1	0.8680	1.0000					
wk2	0.9379	0.9288	1.0000				
wk3	0.9457	0.8289	0.9420	1.0000			
wk4	0.9251	0.7250	0.8542	0.9432	1.0000		
wk5	0.8901	0.6144	0.7727	0.8701	0.9457	1.0000	
wk6	0.8255	0.5041	0.6723	0.7747	0.8636	0.9487	1.0000

wk1: . di .8680^2 = .753424

wk4: . di .9251^2 = .85581001

wk2: . di .9379^2 = .87965641

wk5: . di .8901^2 = .79227801

wk3: . di .9457^2 = .89434849

wk6: . di .8255^2 = .68145025