New Estimates of Speed of Adjustment
Residential and Non-Residential Investments in Structures

The speeds of adjustment were last estimated in February 2001 using 1974-1998 state data generated by the REMI model. The current estimates utilize 1995-2007 state data. As in past estimates investment is specified as a stock-adjustment process, with the actual capital stock adjusting to the desired capital stock.

$$I_t = \alpha (K_t{}^* - K_t)$$

where

I_t is residential or non-residential investment in structures in calendar year t

$K_t{}^*$ is optimal capital stock

K_t is actual capital stock

α is the speed of adjustment
          or the proportion of the gap between optimal capital stock and
              actual capital stock that is eliminated by investment

Ordinary least squares is used in the estimation. Investment data is constructed using Census Bureau housing building permits by state, the Census Bureau value of construction put in place in the nation, and the BEA real investments in the nation in chained 2005 dollars. The optimal capital stock and actual capital stock by state are those calculated by the PI+ model.

For purposes of estimating the coefficient, the time series data on investments, optimal capital stock and actual capital stock are transformed from levels to first differences to avoid the problems caused by non-stationary data series in regression.

Regression Results

Below are the new estimates of the speeds of adjustment compared with those from February 2001 (currently used in PI+ model) and with the estimates in the Rickman, Shao, Treyz paper (1993).   It can be seen that the speeds of adjustment are fairly stable over time.

Estimates of Speed of Adjustment α

	New	From Feb 2001 (used in PI+)	From Rickman, Shao, Treyz 1993 Article
Residential Investments in Structures	0.128	0.097	0.127
Non-Residential Investments in Structures	0.064	0.070	0.061

Regression Diagnostics for New α

	Std. Error	t	N	R-square
Residential Investments in Structures	0.0039	32.5	540	0.661
Non-Residential Investments in Structures	0.0052	12.1	400	0.267