

## Notes on the Manheim Used Vehicle Value Index Forecast

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Moody's Analytics introduced a new forecast for the Manheim Used Vehicle Value Index (FMUVIM). Validation revealed that the previous equation had counterintuitive shock properties. The new equation features intuitive shock properties and links fluctuations in the index explicitly to core economic variables that are provided in the CCAR exercise. These include consumer price inflation, the unemployment rate, and Standard & Poor's volatility.

The new specification works as such:

The core CPI variable captures broader inflation trends. Its inclusion in the specification ensures that Moody's Analytics is estimating the real Manheim index. The inclusion of a one-period lagged, four-quarter moving average of new-vehicle sales proxies the supply-side effect of increased vehicle production on used-vehicle prices. As new-car sales increase, more cars will come off lease, and more cars will be traded into the secondary market. The negative coefficient indicates that rising vehicles sales will, over time, weigh on used-vehicle prices.

The unemployment rate is a demand side indicator. Higher unemployment means less demand for used cars and thus lower prices. Finally, the S&P volatility index is designed to capture the effect of financial crises depressing used-car prices. This relationship is clearly observable during the Great Recession and speaks to the effect that crises have on depressing asset prices.

### Equation specification

Dependent variable: DLOG(FMUVIM\_US)

Method: Least squares

Date: 02/15/17 Time: 11:34

Sample: 1995Q2 2015Q4

Included observations: 83

Variable	Coefficient	Std. error	t-Statistic	Prob.
DLOG(FCPIUL1E_US)	0.693915	0.419482	1.654221	0.1021
DLOG(@MOVAV(FRVEHL_US(-1),4))	-0.215439	0.107533	-2.003467	0.0486
DLOG(FLBR_US)	-0.099372	0.060766	-1.635325	0.1060
DLOG(FSPVOL_US)	-0.022768	0.007245	-3.142706	0.0024
R-squared	0.181961	Mean dependent var		0.002857
Adjusted R-squared	0.150896	S.D. dependent var		0.022084
S.E. of regression	0.020349	Akaike info criterion		-4.904529
Sum squared resid	0.032714	Schwarz criterion		-4.787958
Log likelihood	207.5380	Hannan-Quinn criter.		-4.857697
Durbin-Watson stat	2.165916			

\*Mnemonics referenced in the above equation, e.g. FET, can be defined using the Mnemonic 411 feature on DataBuffet. Please contact Help@economy.com for assistance.