Notes on the Home Mortgage Liabilities Forecast

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Kara Naccarelli

Moody's Analytics introduced a new forecast for home mortgage liabilities (FZFL153165105Q). This is an important variable that determines mortgage refinancing originations, household net worth, and the household debt service ratio. The equation was modeled based on the assessment that three channels should affect the series: mortgage repayment (which includes both end of loan term and pre-payment), new mortgage origination, and mortgage default.

The inclusion of all three concepts was the starting point for equation re-estimation. Moody's Analytics previous specification included the default concept only to the extent that it was captured in the lagged dependent variable term. The new specification still uses the lagged dependent variable term, which provides critical information on mortgage repayment, but it explicitly includes a mortgage foreclosure regressor. Mortgage liabilities declined during the Great Recession for the first time in the post-WWII period. Accounting for defaults would have helped the model anticipate this result.

The new specification also features a first-order auto-regressive term. A Breusch-Godfrey serial correlation LM test on the residuals indicated that the null hypothesis of no serial correlation could be rejected. Because we include a lagged dependent variable as a regressor, this result implies that an auto-regressive term must be included to preserve the integrity of the forecast equation.

Equation specification

Dependent Variable: DLOG(FZFL153165105Q_US)
Method: ARMA Generalized Least Squares (Gauss-Newton)
Date: 03/10/17 Time: 08:34
Sample: 1990Q4 2016Q3
Included observations: 104
Convergence achieved after 5 iterations
Coefficient covariance computed using outer product of gradients
d.f. adjustment for standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(FZFL153165105Q_US(-1))	0.977713	0.013071	74.80139	0.0000
DLOG(@MOVAV(FMOF14PQ_US,3))	0.009288	0.003917	2.371412	0.0196
D(FXMBAFI_US(-3))	-0.003469	0.001522	-2.279718	0.0247
AR(1)	0.311312	0.104626	2.975483	0.0037

R-squared	0.983802	Mean dependent var	0.013311
Adjusted R-squared	0.983316	S.D. dependent var	0.013145
S.E. of regression	0.001698	Akaike info criterion	-9.880141
Sum squared resid	0.000288	Schwarz criterion	-9.778434
Log likelihood	517.7673	Hannan-Quinn criter.	-9.838937
Durbin-Watson stat	2.083545		

Inverted AR Roots	.31

*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.