

Note on the Upland Cotton Price Forecast

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Moody's Analytics has respecified its forecast equation for upland cotton price. The motivation was to provide an equation that was much richer in detail and more tied to the fundamentals of the cotton market rather than broadly following the trajectory of the commodities market. The old equation was simply a differenced log specification using WTI crude oil with a one-period MA. The new equation references prices received by farmers, the unemployment rate, the PPI for textile products and apparel, oil prices to proxy the commodity market, the S&P 50 volatility index for shock properties, Chinese imports to capture the effect of the demand side of the cotton market, and an AR(1) term to smooth any potential jump offs. The new equation adds shock properties, unlike its predecessor, and it features lower root mean squared error during backtesting.

New equation specification

Dependent Variable: DLOG(FXCPFCCUQ_US)
Method: ARMA Generalized Least Squares (Gauss-Newton)
Date: 10/03/19 Time: 10:19
Sample: 1994Q2 2017Q4
Included observations: 95
Convergence achieved after 9 iterations
Coefficient covariance computed using outer product of gradients
d.f. adjustment for standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.473463	0.437987	-3.364170	0.0012
LOG(FXCPFCCUQ_US(-1)/FCPFRA_US(-1))	-0.317681	0.095372	-3.330968	0.0013
DLOG(FCPFRA_US)	0.241348	0.118079	2.043954	0.0441
DLOG(@MOVAV(FXPPITX_US,3))	4.317409	2.478496	1.741947	0.0851
D(FLBR_US)	-0.116778	0.035521	-3.287536	0.0015
D(FSPVOL_US(-1))	-0.034447	0.012534	-2.748201	0.0073
@AFTER("2004q1")	-0.109020	0.041519	-2.625812	0.0103
DLOG(FCPWTI_US)	0.095623	0.049874	1.917317	0.0586
DLOG(@MOVAV(FIM\$_ICHN,4))	0.625258	0.907956	0.688643	0.4929
AR(1)	0.514429	0.146774	3.504905	0.0007
R-squared	0.503867	Mean dependent var		0.000338
Adjusted R-squared	0.451335	S.D. dependent var		0.091659
S.E. of regression	0.067893	Akaike info criterion		-2.439225
Sum squared resid	0.391807	Schwarz criterion		-2.170396
Log likelihood	125.8632	Hannan-Quinn criter.		-2.330598
F-statistic	9.591675	Durbin-Watson stat		1.830808
Prob(F-statistic)	0.000000			
Inverted AR Roots	.51			

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

Previous equation specification

Dependent Variable: DLOG(FXCPFCCUQ_US)
Method: ARMA Conditional Least Squares (Marquardt - EViews legacy)
Date: 03/27/14 Time: 15:50
Sample (adjusted): 1994Q2 2013Q4
Included observations: 79 after adjustments
Convergence achieved after 8 iterations
MA Backcast: 1994Q1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(@MOVAV(FCPWTI_US,2))	0.325440	0.096783	3.362559	0.0012
MA(1)	0.374964	0.105524	3.553355	0.0007
R-squared	0.260182	Mean dependent var		0.002030
Adjusted R-squared	0.250574	S.D. dependent var		0.095273
S.E. of regression	0.082477	Akaike info criterion		-2.127598
Sum squared resid	0.523792	Schwarz criterion		-2.067612
Log likelihood	86.04014	Hannan-Quinn criter.		-2.103566
Durbin-Watson stat	1.933589			
Inverted MA Roots	-0.37			

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