Time Series Data.

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1. The Data

Available data corresponds to 44 monthly CPI series of agricultural commodities. Among those series, 42 of them conform the non-core agricultural CPI basket,[1] and 2 series refer to international prices. Time series of domestic price indexes were obtained from the National Institute of Statistics and Geography of Mexico (INEGI, by its Spanish acronym). All indexes are base December 2010=100 and represent prices paid by consumers at the retail level. International prices were obtained from the IMF and are deflated by the US CPI.[2]

We have data for the period 1987M1-2014M9 and conduct the analysis for each of the aforementioned commodities in the sub-period[3]: 1987-1993

In order to fit the model, we transform the series by means of the following steps: first, we take the first difference of the logarithms of the level series; second, on the transformed series we fit an Autoregressive Model of up to 12 lags (AR(12)) to control for possible periodic components and other deterministic factors; finally, we check that the residual is white-noise through its autocorrelation function. We perform these steps for each one of the analyzed series in the periods for which we estimate the GARCH with Trend model.

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[1]The commodities included in the basket are apple, avocado, bananas, beans, carrot, cucumber, dry chili, grapes, green beans, green tomato, guava, lettuce and cabbage, lime, melon, nopales, onion, orange, other fresh chilies, other fruits, other legumes, other dry legumes, papaya, peas, peach, pear, pineapple, poblano chili, potato and other tubers, serrano chili, squash, tomato, watermelon, zucchini, pasteurized and fresh milk, beef, beef offal, chicken, eggs, fish and seafood, other seafood, pork and shrimp.

[2]The price of sugar refers to the "Sugar, Free Market, Coffee Sugar and Cocoa Exchange (CSCE) contract no.11 nearest future position, US cents per pound"; the price of poultry is the "Poultry (chicken), Whole bird spot price, Ready-to-cook, whole, iced, Georgia docks, US cents per pound"; the price of swine is defined as "Swine (pork), 51-52 % lean Hogs, U.S. price, US cents per pound"; the price of maize is the "Maize (corn), U.S. No.2 Yellow, FOB Gulf of Mexico, U.S. price, US$ per metric ton"; the price of beef refers to the "Beef, Australian and New Zealand 85 % lean fores, CIF U.S. import price, US cents per pound" and the price of wheat is defined as "Wheat, No.1 Hard Red Winter, ordinary protein, FOB Gulf of Mexico, US$ per metric ton". See http://www.imf.org/external/np/res/commod/index.aspx.

[3]In [2, 1] the authors carry out the analysis also for the sub-periods: 1994-2005 and 2006–2014. These sub-periods were chosen based on historical considerations of price policies, which were further confirmed in the analysis.

Data is available in *Series.mat* for matlab users and in *TIME_SERIES.zip* file all 44 time series can be found in *.dat* format.

Referencias

[1] Santiago Guerrero, Gerardo Hernandez-del-Valle, and Miriam Juárez-Torres. A functional approach to test trending volatility. *Documentos de Investigación Banco de México*.

[2] Santiago Guerrero, Gerardo Hernandez-del-Valle, and Miriam Juárez-Torres. A functional approach to test trending volatility: Evidence of trending volatility in the price of Mexican and international agricultural products. *Agricultural Economics*.