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ГЛОБАЛНИТЕ ПАЗАРИ 2020: ПЕРСПЕКТИВИ И ПРИЛОЖЕНИЯ ЗА ПОЛИТИКАТА ОТ FAPRI-MU
GLOBAL MARKETS TO 2020: FAPRI-MU OUTLOOK AND IMPLICATIONS FOR POLICY

Уйлям Майерс, Джулин Бинфийлд, Майкъл Хелмар
William H. Meyers*, Julian Binfield*, Michael Helmar**

*Институт за изследвания в земеделието, храните и аграрната политика към Университета - Мисури
**UCED в Университета Невада – Рено
*FAPRI at University of Missouri
**UCED at University of Nevada - Reno

E-mail: meyersw@missouri.edu

Abstract

Global agricultural market conditions have changed significantly in the last decade, with two price spikes and relatively high and volatile prices. A historic drought in the U.S. Midwest led to another spike in the price of cereals and many were suggesting that very high prices for agricultural commodities would continue indefinitely. However, more favorable weather has brought prices down dramatically, a further example of the volatility that has been a feature of markets in recent years. Recent updates of FAPRI-MU market projections provide insights into market developments during the next 10 years. Where will prices go from here? What is driving these movements? We begin with a review of the latest FAPRI-MU projections and discuss the likely changes in the global market and policy environment over the next decade.

Key words: grain markets, price analysis, supply and demand outlook, agricultural policy, price projections

INTRODUCTION

We employ market analysis and quantitative assessment to look at global market prospects that also have implications for future policy directions. Ever since the price surges of 2007/08, there has been a growing consensus among analysts that price levels and price volatility will be quite different in the future than in the period prior to the 2007price surge. With the exception of the dramatic price reductions immediately following the surge in 2008 and 2009, market prices have continued to be high and volatile compared with pre-2005 behaviors (figure 1), and most market analysts expect this pattern to continue.

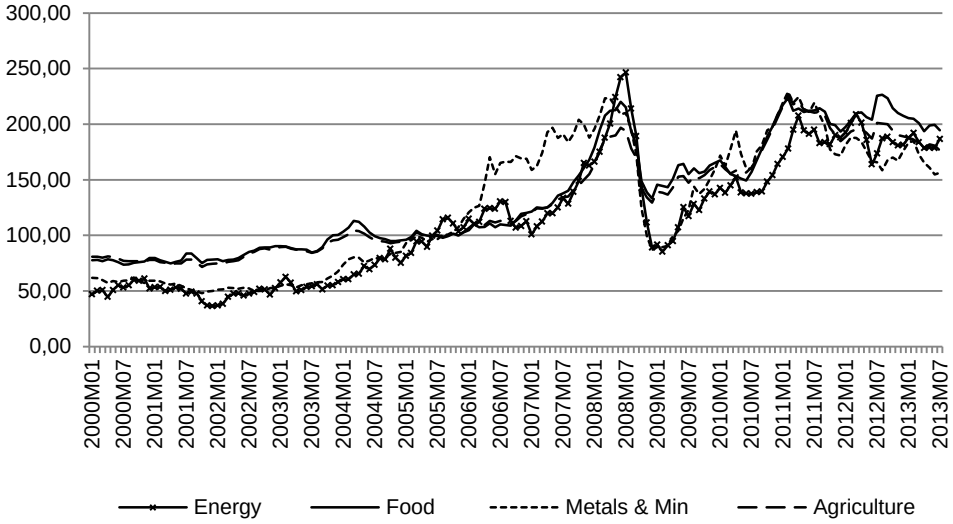

Figure 1. World Bank food, energy, metals price indices, 1/00 to 7/13, 2005=100

Source: World Bank, Food, energy, metals and minerals price indices, pink data (2013)

It is instructive at the beginning to look at the causes of the sharp grain price increase in the 2012-13 crop year and to an expected price decline in the current marketing year. The primary cause of the increase in prices in 2012/13 was a historically deep drought in the mid west that saw average U.S. corn yields fall by 16 percent (with expectations of an even greater fall at some points in the year). This contributed to a large decline in global grain supplies (Table 1), at a time when global stocks were already very low. Stock levels were low in part as a result of the fact that the 2012 was the third consecutive year that corn yields in the U.S. had been below trend.

In the current crop year (2013/14) grain production is expected to have the largest increase in recent memory, led by the recovery of corn production in the U.S. In response, grain prices have declined dramatically. It is clear that much of the price gyration was caused by simple supply and demand factors driven by weather shocks. The likely fall in prices from the 2012/13 peak was not just predicted by modeling institutions such as FAPRI-MU or the OECD, but also by the markets themselves where futures markets have been predicting a similar fall in prices.

Table 1. Grain production decline and rise, million metric tons

Coarse Grains	2011/12	2012/13	change	2012/13	2013/14	change
World	1154.0	1128.5	-25.5	1128.5	1245.5	117.0
USA	323.7	286.0	-37.7	286.0	367.8	81.8
FSU-12	78.7	69.0	-9.7	69.0	85.2	16.2
EU 27	150.0	145.1	-4.9	145.1	156.2	11.1
Wheat						
World	697.2	655.3	-41.9	655.3	708.9	53.6
FSU-12	115.0	77.2	-37.8	77.2	108.0	30.8
EU 27 and Aus	168.0	155.1	-12.9	155.1	168.4	13.3
USA	54.4	61.8	7.4	61.8	57.5	-4.3

Source: USDA WASDE Sept 12, 2013

MATERIALS AND METHODS

Given the market fluctuations and uncertainties, policymakers and a wide range of stakeholders in the food and agricultural sector need timely, reliable, and research-based analysis to support improved policy decision making. The approach taken by the Food and Agricultural Policy Research Institute (FAPRI) to modeling and delivery of objective analytical results grew out of this information need. The approach has evolved over time, constantly being improved and refined. In fact, 2013 marks the 29th anniversary of FAPRI's founding. The FAPRI approach to such analysis and dissemination of results has evolved in a number of ways during nearly 30 years, including the application and further development of the analytic approach in a wide variety of countries and organizations and within FAPRI itself (Meyers et al). The analysis conducted by FAPRI evaluates the fundamental factors driving demand, supply and prices in the future but also provides an estimate of possible variances of these results.

Across the different countries where these methods were applied, there are common elements in the analytical approach but also differences in application. The common elements are:

1. Analysts use models as a tool to generate estimates of agricultural commodity production, consumption, trade and prices, as well as the corresponding farm income and taxpayer cost figures that policy makers and stakeholders want. The projections typically span a ten year period.

2. Domestic and trade policies are modeled in explicit detail so that realistic policy impact analyses can be conducted using variables that represent actual policy instruments.

3. National prices of other country or regional models are linked to world prices generated in the annual FAPRI world market outlook analysis.

4. The models are dynamic, partial equilibrium, multi-product, non-spatial, econometric-based systems. That goal is to develop results that realistically reflect how markets evolve over time and how markets are interrelated.

5. Results undergo an interactive review process between modelers and industry and/or government practitioners that improves the quality and usefulness of the analyses, and

6. Major results are delivered in government briefings, academic conferences as well as public venues.

One of the approach's strengths is that it is flexible enough to address regional differences or the alternate policy objectives that clients might have for the model. Partners have different requirements in terms of commodity coverage, exposure to world markets, regional disaggregation or scale of model.

The FAPRI approach is very pragmatic. Statistical and econometric methods are used where possible, but in many emerging market countries the data is not sufficiently complete or available for enough years to do sophisticated econometric estimations. In these cases we rely more on theory and research results in other countries to determine behavioral parameters.

What is important is the capacity to correctly link commodity markets and policies so that any impact of policy or external factor, such a yield change or a world market shock can be traced though the different commodity markets and through time to see the effects on all main markets, not just on the one where the shock occurred. Once the analytical system is operational various analyses and scenarios can be conducted. These follow a consistent procedure. The baseline analysis has four main steps:

1. Economic models are used to capture the basic economic, policy and technical factors that determine supply, demand, prices and trade of commodities and their interactions,

2. Assumptions are made about the likely future paths of demographic and economic factors, technology and agricultural policies,

3. Models are simulated over ten years to generate a baseline of market outcomes,

4. If stochastic results are needed, a simplified system is simulated 500 times with random selections of stochastic variables such as yields, energy prices, macroeconomic variables

5. The result of these analytical steps is a baseline for the next five or ten years that has a mean and also a distribution of the price and quantity outcomes.

Policies are assumed to remain the same as in the current period, and crop and livestock productivity are assumed to grow in line with historical trends. The macroeconomic assumptions are taken from other sources or national projections are used.

RESULTS AND CONCLUSIONS

Here we summarize the most recent results of the FAPRI-MU outlook update in August 2013 (further details can be found in FAPRI-MU, 2013b). Analysts that produce long run projections of agricultural markets such as FAPRI-MU, USDA (Westcott and Trostle, 2013), and OECD-FAO (2013) all concur that we should expect the relatively higher average price levels and higher price volatility that we have experienced since 2007/08 to continue in the near to medium term. These assessments also agree that there are two important new factors that will continue to influence the direction and variance of commodity prices. These are the closer linkage to energy prices through the growing influence of bioenergy in crop demand and the higher frequency and severity of weather events due to climate change.

The FAPRI-MU (2013b) average wheat and corn price projections for the next decade, for example, hover around levels that are 50 to 100 percent higher than they were before the 2007/08 price spike but also about $100/mt lower than in 2012/13 crop year (figure 2). The pattern is somewhat similar for EU prices, but the path is impacted by the fact that the Euro has appreciated by more than 20 percent since it was introduced in 2000 (figure 3), so the price path from 2000 to the present in Euro (figure 4) is substantially moderated by that change as well as increases in transport differentials between Gulf Port and EU ports. Nevertheless, projected grain prices in the EU remain well above pre-price spike levels throughout the projection period.

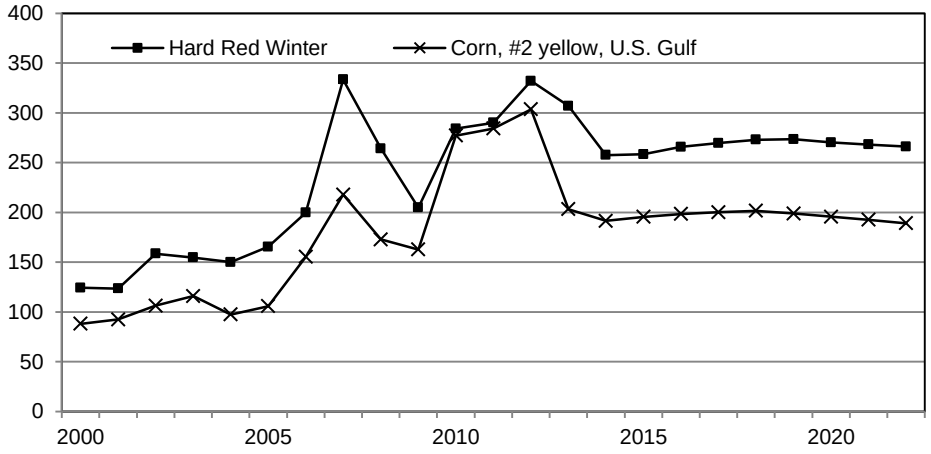

Figure 2. FAPRI-MU projections of U.S. FOB corn and wheat prices

Source: calculated from the FAPRI-MU August 2013 baseline update (2013b)

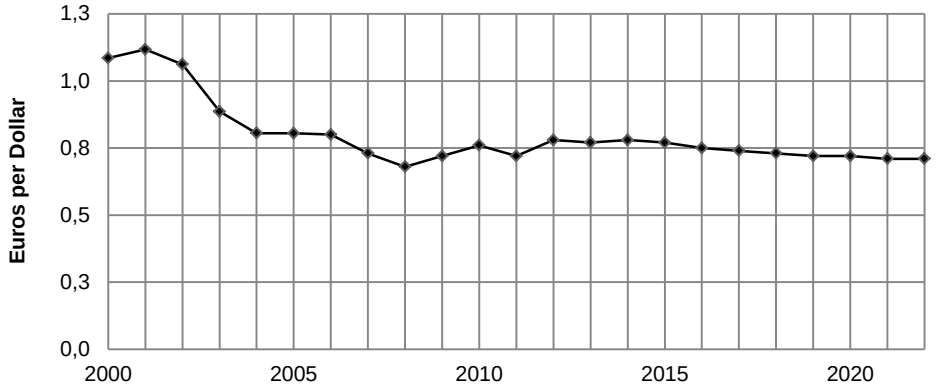

Figure 3. The Euro appreciated and is expected to remain strong against the dollar

Source: IHS Global Insight, July 2013

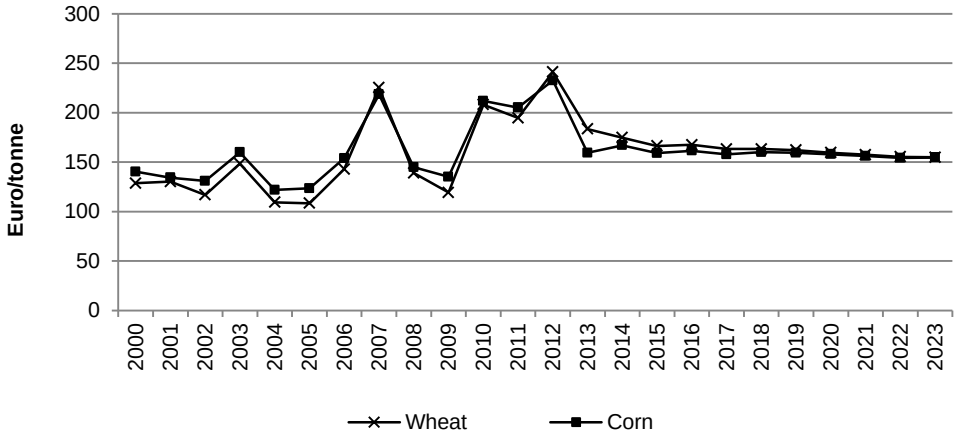

Figure 4. FAPRI projections of EU average corn and wheat prices

Source: calculated from the FAPRI-MU August 2013 baseline update (2013b)

The price projections presented in Figure 2 and Figure 4 are averages around which there is expected significant year on year fluctuation primarily as a result of yield fluctuations. FAPRI-MU attempts to include this by undertaking a limited stochastic analysis that allows a representation of some of the uncertainty regarding key variables in the modeling system, such as yields, and in this case generate prices that are sometimes much higher or lower than seen in the smooth

average price projections (Westhoff et al.). For illustrative purposes, some of the variability in world prices that was generated as part of the March 2013 stochastic baseline is applied to the world prices from the August update (the August update uses the deterministic baseline. A few examples of paths that the US corn takes are shown as an example (figure 5).

When all 500 draws are assessed, there is a range of possible outcomes illustrated for U.S. farm price of corn in figure 6, where the price is expected to be between the higher and lower bounds 80 percent of the time.

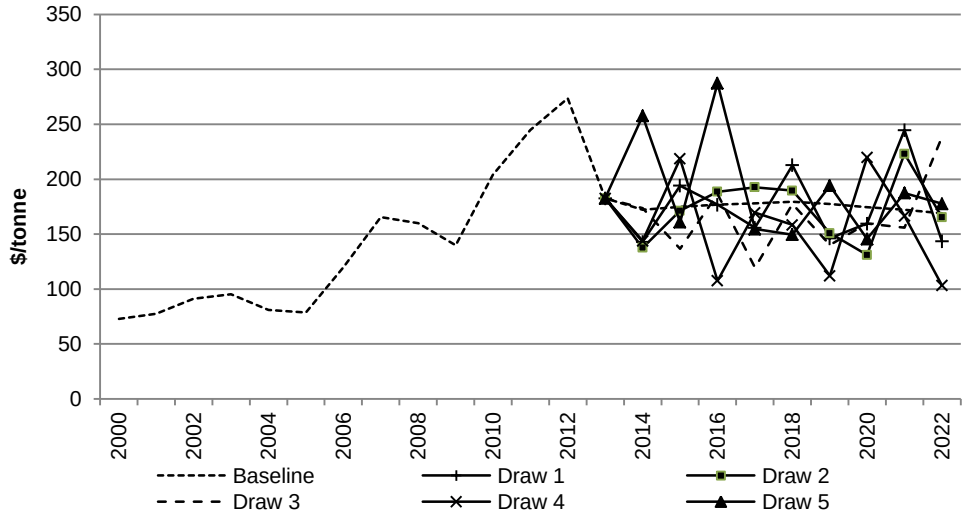

Figure 5. FAPRI projection of U.S. corn farm price in 5 of the 500 outcomes

Source: Calculates based on the FAPRI-MU August 2013 baseline update (2013b) and the March 2013 FAPRI-MU stochastic U.S. baseline.

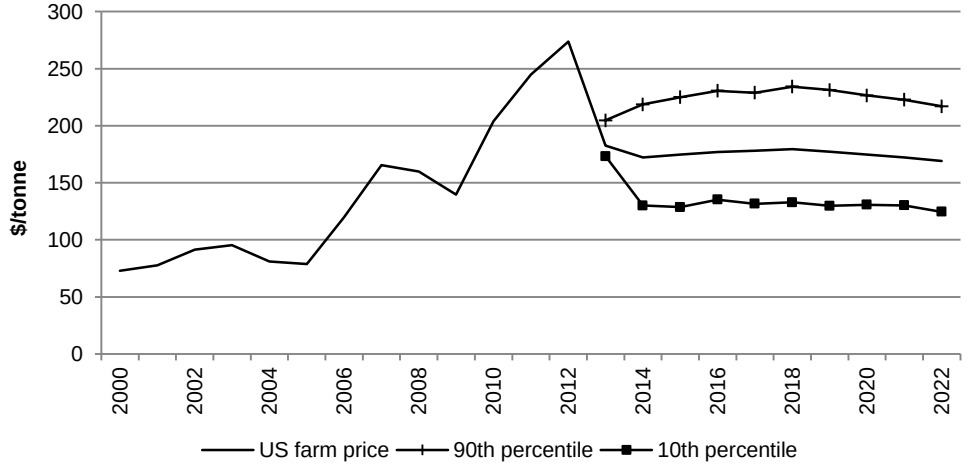

Figure 6. Range of stochastic outcomes for U.S. farm price of corn

Source: Calculates based on the FAPRI-MU August 2013 baseline update (2013b) and the March 2013 FAPRI-MU stochastic U.S. baseline.

The U.S. and the EU are undergoing changes to their respective agricultural policies. In the U.S., the increase in commodity prices has seen expenditure under several safety net programs shrink so that recent expenditure has comprised mainly of direct payments and subsidies to crop insurance, whose cost has risen with the higher prices. The increase in price volatility, and the belief that this price volatility and the higher level of prices is likely to continue in the future, has seen attention shift to risk management tools. Likewise, market information and financial management skills are becoming more valuable to producers given market conditions. Although the United States has not yet completed the decision processes on changes in farm policy, it seems clear that decoupled direct payments are likely to be eliminated. The savings from that change would partly go to reducing the total cost of farm programs and partly to a new measure that supplements crop insurance by protecting farmers from "shallow losses".

The European Union has faced similar challenges to the U.S. In the EU, previous reforms have reduced safety net support levels and liberalized markets so that now EU producers often receive the same world prices as their U.S. counterparts and have also had to deal with volatility. The recession has seen pressure on the EU budget. However, the EU has managed to largely protect the budget for agricultural support, and keep decoupled payments in part by tying them ever more closely to goals other than commodity production. The latest reform does include some measures for income protection or risk management, but it is not yet clear whether these will be implemented or what their scope will be.

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Рецензент – д-р Марек Вигиер

E-mail: wigier@ierigz.waw.pl