

Adina-Roxana MUNTEANU
The Bucharest Academy of Economic Studies
Ioan-Vladut NUTU
University Politehnica of Bucharest

THE PRICE DYNAMICS ON THE ORGANIC MARKET IN ROMANIA BETWEEN 2010 AND 2015

Empirical Study

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Abstract

For a correct functioning of a market, prices represent vital information. As the organic agricultural market is much younger than the conventional agricultural market, the prices for organic agricultural commodities tend to be less transparent than those of the conventional commodities. In Romania there are no published informational bulletins dedicated to organic prices. In order to try to fill in the informational gap, this paper reviews the evolution of prices of wheat on both conventional and organic markets between 2010 and 2015 in Romania and at EU level. Furthermore, the paper discusses the importance of the transparency of prices for the proper functioning of the market and reviews some of the available organic price information in USA and EU.

INTRODUCTION: AGRICULTURAL COMMODITIES PRICES

On a market, the price level is the results of the interaction between supply and demand. In the agricultural market, the main factor influencing the price is the supplied quantity- meaning agricultural production which is mainly determined by weather patterns and also agricultural technologies employed.

The conventional agricultural commodities markets benefit from a lot of statistical information concerning production and prices. However, the organic agricultural commodities markets are much less transparent regarding the traded volumes and prices. Given the relatively lower frequency of transactions on the organic market, the prices are even difficult to track and even more difficult to forecast.

Governmental agencies in Romania do not publish statistics on the output of the organic agricultural commodities. Moreover, the certification and inspection bodies that have access to such information do not make this kind of data public.

The organic producers in Romania are obliged by law to request and obtain a transaction certificate from their certification and inspection body prior to selling their organic product. Therefore, the certification and inspection bodies have access to both volumes of traded organic agricultural products and prices.

It is interesting to point out that no certification and inspection body in the EU publishes aggregated data on the organic production.

This article aims to discuss some aspects related to the dynamics of prices for agricultural commodities, both organic and conventional.

Because the prices of agricultural commodities are influenced by supply and demand ratio, we will have a look at the potential offer available on the Romanian market and review the information available on demand.

Each commodity market has its own characteristics and prices are market dependent. There are different price ranges on the international markets compared to the domestic ones. Depending on the degree of integration of the domestic markets with the international one, the changes in global prices can be transmitted at national level. Governments intervene with measures such as import duties, export taxes, non-tariff barriers or domestic policies that impact the way prices change in domestic markets.

Empiric analyzes highlight the influence of factors that determine the evolution of prices of agricultural commodities such as the energy-agriculture linkage, exchange rates, interest rates, futures markets, speculative activities on agricultural commodity prices (Nazlioglu & Soytaş, 2011; Nazlioglu et. al.,2013).

In a study regarding the price volatility spill over between oil and prices of biofuels agricultural commodity markets (Nazlioglu et. al.,2013) the risk shocks in oil markets created significant responses of the agricultural markets only for the post-crisis period. Moreover, the study concludes that such responses dissipate in a period of about a month implying that factors such as the risk in energy markets seem to drive the short run volatility in agricultural markets, with higher effects for countries vulnerable to fluctuations in food prices.

Even if at the global level, the prices of oil influence agricultural commodity prices, the effect is different for each country. For example, in a paper investigating the interdependence between oil prices, lira-dollar exchange rate, and individual agricultural commodity prices in Turkey, concluded that the neutrality of all agricultural prices in Turkey to world oil price is due to the relatively low energy intense production processes (Nakasone, 2013).

The long run neutrality of agricultural commodity prices to oil and exchange rate changes (Zhang et. al., 2010) is however a cautionary phenomenon and implies that policy makers have little influence on the short term price volatility of agricultural commodity prices.

ORGANIC AGRICULTURAL COMMODITIES PRICES

Price is a signaling mechanism on the market. It carries information about the supply-demand ratio, market structure, and quality of the good.

In general, the price dynamics price should accurately reflect market fundamentals and not convey incorrect signals as a result of missing or wrong information, speculation, panic or other disruptive factors.

On a micro scale, the price of organic production is also correlated to the production costs. Studies (McBride & Greene, 2009); McBride et. al., 2012) show that the organic production has a considerable different structure than conventional agricultural production, with significantly higher labor requirements associated with organic crop production.

As agricultural output is highly dependent on the weather conditions, prices are influence by weather patterns and the stocks available on the market. Therefore, improved short-run production forecasts using the latest technology that correctly translates meteorological and remote sensing data into the yield and production expectations impacts the price formation. However, such data is scarce and rarely reaches the small producers in rural areas.

On a theoretical level, the prices of organic agricultural commodities include more than the cost of production. Prices of organic commodities should reflect other factors such as: enhanced

protection of the environment, rural development via additional farm employment, higher standards of animal welfare, better health of the farmers due to the prohibition of pesticides and insecticides (FAO, 2016).

Since price is determined by available supply, let's have a look at the overall production of agricultural commodities in Romania. As seen in figure one, the area under organic agriculture is very small compared to the overall agricultural area. The percent of the organic agriculture in the total area of the agricultural are in Romania has increased from 1.2% in 2010 to 2% in 2014.

Agricultural commodities prices are also driven by exports. In 2014, Romania exported good worth 71.4 billion dollars. In the same year, the value of the wheat exports reached 1.96 billion dollars and represent 2.8% of total exports (OEC, 2016). The export consists of organic and conventional products. In addition, regarding the export of organic production, Romania continues to export mostly cereals, honey products, berries and very little processed foods such as cheese, vine and bakery products. Main markets for the Romanian organic products are Germany, Austria and Belgium (Zaharia, 2013). These are also the countries from which Romania imports most of the processed organic products.

From another perspective, one should note that on the organic market, reputation plays an important role and has a significant impact on price. The price level of organic commodities is affected by the reliability of producers and quality of the products traded. Previous studies note that the decreasing reputation of the Romania producers as a result of scandals on the organic market lead to a slower closing of deals and lower prices, mainly in the cases of export (Munteanu, 2014).

Another major factor that impacts the price of the organic product that reaches the consumer is the degree of processing and the location of the processing facilities. Lack of domestic infrastructure and companies that specialize in processing the organic products, means that Romania mostly exports raw organic commodities and imports highly processed organic products. An illustrative example would be for the decortication of sunflower seeds. In Romania there is no certified company that is able to offer the service of decortication of the sunflower seeds as an intermediate stage in the oil making process. Therefore, the organic sunflower oil will be much more expensive because the closest facilities for decortication are located in Hungary.

1.1 Initiatives to Create Transparency on the Organic Markets Worldwide

There are several agencies and institutions that aim to improve market transparency by encouraging the

gathering and processing of information related to production and prices of the conventional agricultural products. Such organizations are Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), Organization for Economic Co-operation and Development (OECD), and World Bank just to mention a few of them.

Agricultural Market Information System (AMIS), an agency hosted by FAO, is a collaboration platform meant to enhance food market transparency and encourage international policy coordination in times of crisis. It was created after two consecutive price hikes that occurred in 2007/08 and 2010 and it monitors prices on four major international markets: wheat, maize, rice and soybean via a periodic report entitled "Market Monitor which gives a synopsis of major market developments and the policy and other market drivers behind them.

As pointed before, the prices of conventional agricultural commodities are available from multiple sources. On the other hand, there are very little initiatives to make the organic prices more transparent. In order to fill in the information gap, the authors started to investigate the potential sources of prices data. The results are three organizations in the USA, one in Canada and two in Europe. Please be advised that the search was done using only the English language.

In the USA, the researchers found three initiatives that aim to increase the transparency of the organic prices from three different organizations: United State Department of Agriculture (USDA), Maine Organic Farmers and Gardners' Association (MOFGA) and Rodale Institute.

The USDA (usda.gov) makes public on their website some statistics regarding the wholesale prices for organic grains and feedstuffs, for the period of 2011 until 2013. These prices are monthly, based on a weighted average, FOB and negotiated sport market, reported in USDA, AMS National Organic Grain and Feedstuffs. Since 2014, the data is available in a different type of bulleting, issued twice a month. For an analysis of the evolution of the prices, data needs to be compiled by the user.

The MOFGA (www.mofga.org/) collects organic prices via regular surveys of certified organic farmers in Maine, who give their obtained prices for both retail and wholesale. Data is collected from a relatively small size sample and there are only a few prices available for certain products, usually with a rather wide range of prices. The data is available for free for all the parties interested, but for analysis purposes, data needs to be compiled by the user.

Rodale Institute (rodaleinstitute.org), an institute in Pennsylvania, USA, supports organic farmers with the research and education. The institute researches

best practices of organic agriculture and shares the findings with farmers and scientists throughout the world, advocates for policies that support farmers, and educates consumers. The institute has a project - Organic Price Report- which is an online tool that helps farmers competitively price their products, providing information on both organic and conventional prices. However, this initiative to offer farmers prices of certified organic products (such as fruit, vegetable, herbs and grains) on several markets in the USA is just stated, with organic prices being available since October 2016. The impact of this initiative cannot be quantified at this point, but it has the potential to be a highly utilized tool, since it is easy to use and also provides nation-wide data for a large range of products.

In Canada, a private initiative called Organic Price Tracker (<http://organicpricetracker.ca/>), provides regional prices of certified organic products sold at farmers' markets across Ontario and the Maritimes. The initiative is launched by Canadian Organic Growers Perth-Waterloo-Wellington to support the local organic sector through the development of farm management tools. The prices available represent a minimum-maximum range. The collection of the prices is done on a voluntary bases, by a network of farmers and consumers. Only the latest prices are available, with no possibility to see the evolution of the price for each of the products.

In the EU, two sources that provide organic prices have been identified by the researches: an online trading platform based in Germany (Organic Trading Exchange) and a farmers' association (Soils Association) in UK.

The online trading platform (www.o-tx.com) that aims to facilitate international commerce with organic raw products also monitors the prices of organic transactions. The o-tx platform provides to interested parties a summary of prices and an analysis of the dynamic market for specific products. The data is collected via surveys of producers and transactions on the platform. The data has increased traceability and comparability in time, as the methodology is coherent. The price ranges are available since 2008, allowing for an analysis for a longer period of time. The data is however private and is available for a fee.

In UK, Soils Association (www.soilassociation.org) publishes monthly updates of organic prices. At the time of the writing of the present article, the website offers organic prices for wheat (milling and feed), barley, oats (milling and feed), and beans at the level of September 2016. Moreover, for horticultural products wholesale, retail, and supermarket price ranges have been compiled for 30 products from a variety of sources such as organic wholesalers, retailers, farm shops for the level of October 2016. However, such data is not

available across periods of time, or at least not online, for free.

We could conclude at this point that there are limited information available regarding the prices of organic agricultural commodities. Moreover, the existing data cannot be compiled in a coherent database because of the differences in methodologies used by the organizations that do collect data.

1.2 Dynamics of Organic Wheat Prices in Romania and the EU

This section of this article presents an example of the evolution of the prices for wheat, for both organic and conventional and at the level of Romania and the EU. Wheat was selected because it is a very popular crop in Romania. The prices collected for the period 2010 until 2015 are presented in figure two.

The data regarding the organic prices of wheat at EU level have been collected by the authors from various sources such as specialized magazines, articles in the press, websites of farmers associations and two trading companies that were kind enough to offer their transaction prices, and which, as requested, remain anonymous. These data have been collected from documents in Romanian, English, French and Spanish. Please note that data available in all the other languages has been ignored. Where there were multiple price information for the certain month, for the purpose of building the graph in figure two, the researcher used an average price. The prices exclude transportation costs, but do reflect the different qualities of wheat – bakery and fodder.

The authors do not claim the series of data representing the prices of organic wheat is representative at EU level. However, the information provided by these collected prices do reflect particular transactions.

The value of the organic prices for wheat is that they show that the organic wheat is sold between 38% and 47% higher prices than the conventional wheat.

The conventional wheat prices were collected from the EU Commission (2016), which publishes every month a *Commodity Price Dashboard* for the most representative agricultural products at EU and world level. Tracking these monthly reports gives an overall perspective of the price dynamics on the agricultural markets. Using this database with the EU market prices for the most representative, the researcher selected the information on wheat.

As it is visible in figure two, the prices on the Romanian market follow the EU level prices for conventional products. The correlation is significant between the Romanian and the EU market prices for conventional wheat, with a correlation coefficient of 0.94.

On the other hand, the correlation coefficient between the organic wheat and the conventional wheat price series is 0.55, which means that the correlation is relatively small. This implies that the factors that influence the organic prices are different than the ones that influence the conventional prices.

In the context of the collected organic prices, a partial conclusion is that transactions with organic wheat are closed at consistently higher prices.

DISCUSSION: PRICES & THE MARKET

The price is a signal for a bundle of information about the product. For the organic agricultural products the prices are higher as they signal a different quality but also reflect a different production method that is more expensive (Islam, 2013; McBride & Greene, 2009; McBride et. al., 2012).

The lack of transparency on the organic market highly influences the prices obtained by the organic farmer/ producer. In this section of the article, we focus on producer level prices, since organic agriculture is viewed also as a rural development option.

In general, there is consensus in the scientific literature that imperfect information has adverse consequences on market performance and welfare. In rural Romania, the lack of updated information about agricultural markets primarily affects small farmers. In particular, such small farmers are likely to be less informed about market conditions and this affects their. According to our research, the price at the producer level is formed as a result of interaction between seller and buyer which happens in rather small groups. With little interaction between the farmer and the final buyer, the Romanian organic market is characterized by the strong presence of traders and dealers that act as middle man.

Merely the awareness of the prices on the market could change the local prices. A study on the role of price information in agricultural markets (Nakasone, 2013) concludes that the availability of price information has a large and sizeable impact: farmers who have access to accurate market prices for their products could increase their prices (especially for perishable goods) and sell more.

Also worth noting at this point that in rural Romania, a farmer that has organic products but is not updated on the market price via some means of communication (internet, phone) sells at the price offered by the trader at his doorstep. This situation could change if the transparency of the market increases.

In the context of a steadily growing organic market, producers need the documentation of prices. Producers need to see the prices of organically and

conventionally commodities side by side, as to better understand the premiums the organic can obtain (Islam, 2013). Prices are clearly important for any type of business decision making. The business model of farms needs correct and sufficient price information for a proper estimation of future revenues. With a solid tracking of the organic prices, farmers could better plan their production strategies. Production budgets based on organic sales prices rather than conventional one, could support different business decisions.

Finally, there is also the question of insuring the crops, which is done according to the market price. Organic farmers need to be able to insure their crops according to organic prices but until now they cannot really document the price information for their goods.

CONCLUSIONS

It can be argued that the lack of reliable and updated information on crop supply, demand, stocks and export availability contributes to price volatility on the agricultural market. From a producer's perspective, the lack of information on the current situation but also the outlook, and lack of accurate information on market fundamentals may reduce business efficiency.

It is important to note that worldwide there is a very limited amount of information regarding the prices of organic agricultural products. Moreover, the market in Romania and also in the European Union makes no exception. The best proof for this statement is that consistent and dynamic information regarding the prices of organic agricultural commodities in Europe is for sale.

There are more initiatives in the USA for example than in Europe. And it is also worth noting that these initiatives are both public and private.

Correctly substantiated prices mean more efficient function of the market as a whole. Better information and analysis of global and local markets and improved transparency could reduce the difference in local prices and allow for a better and more coherent pricing of the organic products.

Lately there are timid initiatives to improve the market transparency. However, in the absence of the implication of both governments and private sector that could request clear statistics, the market for organic agricultural products will remain highly uncertain in terms of obtainable prices.

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ANNEXES

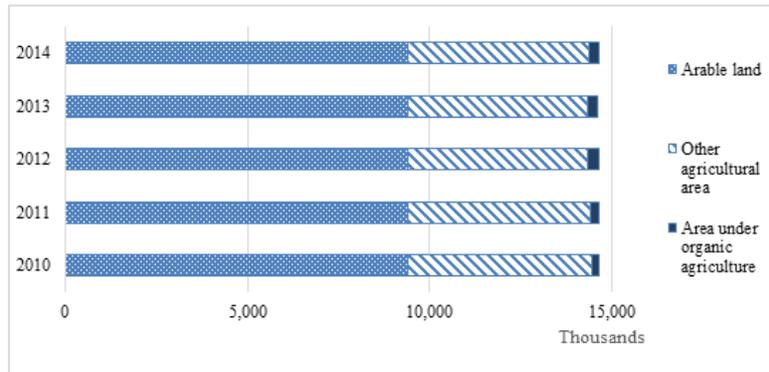


Figure 1. The evolution of the organic areas in Romania compared to total agricultural area and arable land
Source: National Institute of Statistics, Ministry of Agriculture and Rural Development

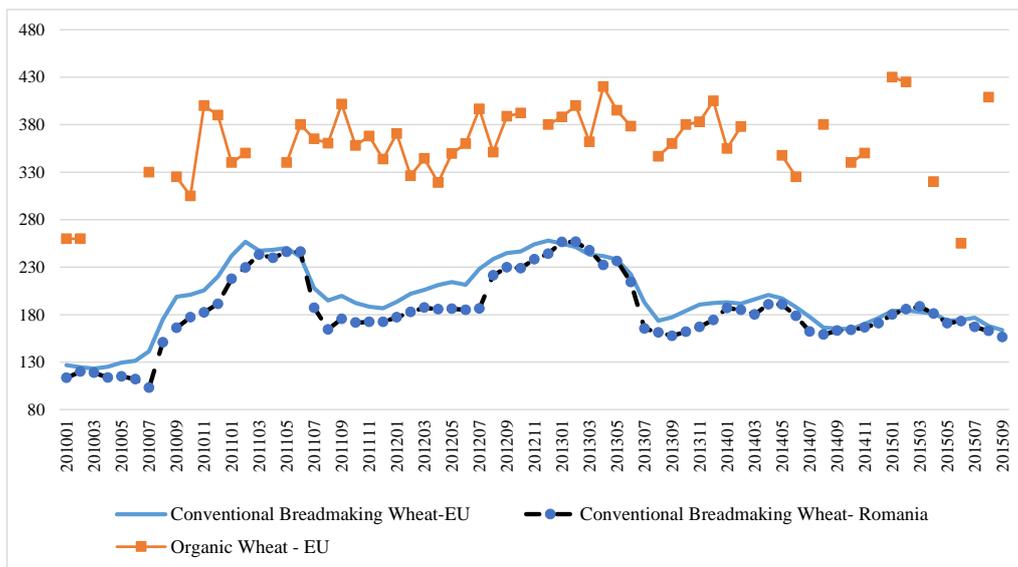


Figure 2. Dynamics of the prices of conventional and organic bread-making wheat
Source: adapted from EU Commission (2016) (conventional prices); collected data (organic prices);