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## AGRICULTURE MARKET INFORMATION INFRASTRUCTURE IN UKRAINE: PERSPECTIVES OF DEVELOPMENT

*Анотація.* У статті розглядаються актуальні питання розвитку аграрного ринку шляхом розбудови інформаційної інфраструктури. Пропонується шлях розвитку ринку через надання об'єктивної інформації про ціни та обсяги та забезпечення її доступності для всіх учасників ринку.

Ключові слова: ціна, аграрний ринок, ринкова інформація, інформаційна система

*Аннотация.* В статье рассматриваются актуальные вопросы развития аграрного рынка путём развития информационной инфраструктуры. Предлагается путь развития рынка способом предоставления объективной информации про цены и объёмы и обеспечение её доступности для всех участников рынка.

Ключевые слова: цена, аграрный рынок, рыночная информация, информационная система

*Annotation.* In the article the actual problems of agriculture market development by way of creation of information infrastructure is reviewed. The authors propose the way of market development by means of giving the best possible information on prices and volumes and providing of such information to all of the market participants.

Keywords: price, agriculture market, market information, information system.

In the past few years, we have experienced a transition from the decades-long period of falling real prices of grains, and food more generally, to a new market environment in which commodity and food prices are, higher, more volatile and more highly influenced by petroleum prices. This market behavior and the conditions surrounding it are likely to continue, and the prospects of returning to the declining prices of the previous decades are less likely.

Also today's perspectives of the Ukrainian agricultural market are rather uncertain. The recent market year showed that contrary to economic laws Ukrainian producers could not use the favorable market conditions due to the short-term policy of export quotas in the grain market. The depressing effect on domestic prices also reduces incentives to produce for the next year. This and other policy interventions by governments around the world have consequences for producers, consumers, traders inside the country concerned as well as for the same groups in other countries around the world.

Many policy ideas are being discussed in Ukraine, including the concept of export policy that only producers or a specified state company could sell their grain overseas. Every policy has different effects on the market, so for any policy proposal it is important to analyze a wide range of impacts on all aspects of the market. Omitting the political discussion and focusing on the economic impacts, we could state that one of the effective ways to build an efficient market, would be using the most inexpensive and powerful instrument — information on prices and volumes. Such information could be provided using the latest and proven models of price formation, based on volumes, markets and policies, and distributing this information widely by the Internet and extension services. The example of efficiency of such a practice could be seen in the role of the Food and Agricultural Policy Research Institute (FAPRI) in this process for the US agrimarket.

***Analysis of the latest publications.*** The problem of provision of information is investigated by many researches, such as Sabluk P.[1,3,4], Shpychak O.[5], Rozgon A., Shpykuliak O.[1], Melnyk Ju., Zorya S.[9], Demyanenko S.[9] and others. Despite all the work already done in Ukraine our market still has a poorly developed information infrastructure. Partially this situation is due to the lack of financing of such work, which resulted in commercialization of analytical work in the agricultural market.

Our input in solving of the information deficiency in the agricultural market is to propose the creation of an independent public-financed analytical centre like FAPRI in USA. With the help of the scientific community and agricultural producers, there could be a

bright future for the developed and successful market information system in Ukraine.

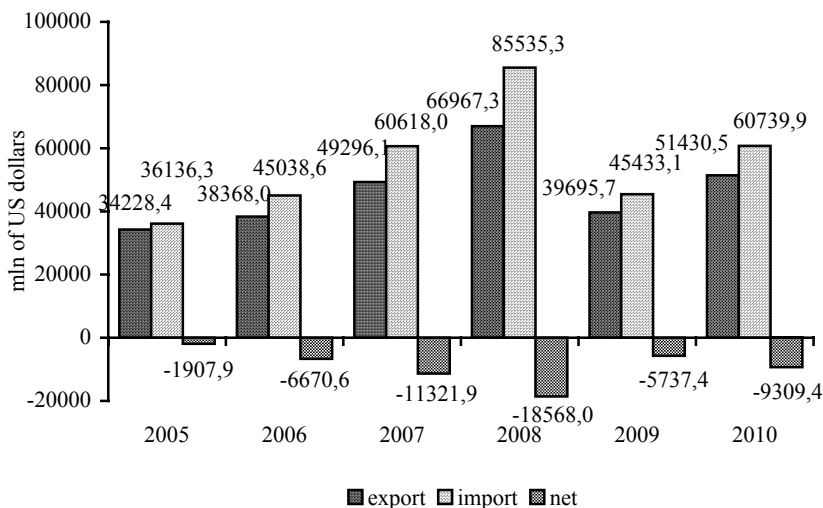
**The goal of this article** is to highlight actual problems of agriculture market development and propose the way of market development by the means of giving the best possible information on prices and volumes and providing of such information to all of the market participants.

**Discussion and results.** Price is the most important thing in the market and also is one of the most difficult variables to collect. In order to understand the process of price formation in agricultural markets, we should remember that this market is strongly influenced by domestic and international policies as well as market conditions. In Ukraine, this market could be compared to the stock market — the future is rather uncertain.

In order to illustrate the importance of information on prices, especially world agriculture markets, let's see the numbers, showing dependence of Ukrainian economy on world markets and prices. In 2010 Ukraine exported to the countries of CIS 36,4 % of all of the commodities and 25,4 % to the countries of EU (for 2009 p. It was 33,9 % and 23,9 %). The 32,3 % from the general volume of export of the country is trade of black metals and products from them. Agriculture products and the food retail industry give 19,3 % of total export (5,1 %, from them fat and butters of animal or vegetable origin 5 % from prepared food products — 4,8 % from grain-crops —), mineral products was 13,1 % (7,1 % from them power materials, oil and products of its distillation), mechanical and electric machines was 11 % (6,1 % from mechanical — 4,9 % from electric —), products of chemical industry and industries related to it was 6,8 %, and transport vehicles and road equipment was 6,3 % of total exports [6].

In total, Ukraine has trade relationships with 217 countries. The dynamics of foreign trade though the years could be shown on picture 1. The tendency to decrease of foreign trade in 2009—2010 and of the first quarter of this year could be explained by the rapid decrease of industrial production due to the high fuel prices and influence of the financial and banking crisis in 2009—2010. But the surprising fact is that agriculture did not suffer as much as the rest of economy, except for the drought of 2010, since production increased. Demand inside Ukraine would not stimulate such growth, but in response to world food price increases everything became justified. Even with high fuel prices (twice as much as in the analog period) the index of agricultural production volume in January-April of 2011 was 104,0 % compared with the same period of 2010 (picture 2) [6].

### Dynamics of export-import volumes



So, the most important question for agricultural producers now is about the future of pricing. Today the situation is favorable for agricultural producers, as numbers in table 2 show. The average price of agrarian products by agricultural enterprises on all of directions of sale for January—April of 2011p. compared with the same period of 2010 p. grew by 63,2 %, for crops by 5,6 % for animal production. In April of 2011 compared with March the average price of grain crops grew by 6,1 %, and, animal production by 6,8 % (table 2).

### Dynamics of agricultural production volume

(by an increasing result from the beginning of year in % to the proper period of previous year)

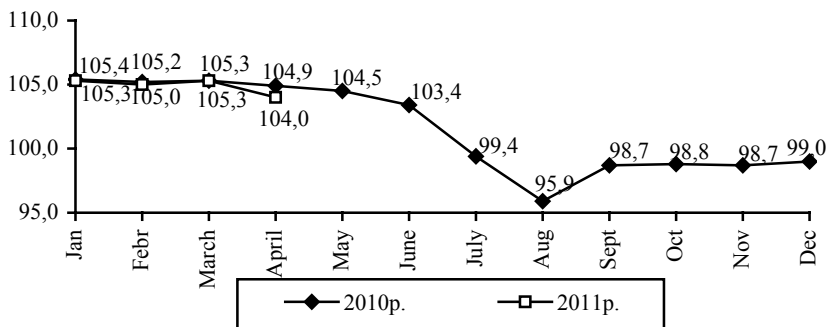


Table 2

**SALES OF BASIC TYPES OF PRODUCTS BY AGRARIAN ENTERPRISES 1  
IN JANUARY-APRIL OF 2011P.**

	Volume of sold products		Average price		Reference: April of 2011 p.	
	Thsd. tons	in % to January—April of 2010 p.	Uah for ton (thsd)	in % to January—April of 2010 p.	Uah for ton (thsd)	in % to March of 2011 p.
Grain-crops	3576,3	86,6	1644,5	163,2	1797,5	106,1
including						
wheat	1541,1	92,4	1537,8	157,3	1632,0	100,4
Rye	21,8	13,9	1309,3	198,5	1403,2	98,6
barley	268,7	28,8	1601,2	198,1	1622,7	93,9
corn	1582,3	136,1	1670,4	139,2	2017,4	114,8
Seed of sunflower	997,4	110,8	4039,8	153,0	4316,2	102,0
Soy	328,6	263,9	3211,6	105,9	3446,4	103,2
Rape	8,5	37,3	3491,6	140,8	3082,2	86,5
Cattle and poultry (in live weight)	549,8	110,3	10 746,6	105,6	11 303,5	106,8
including						
cattle	56,7	92,5	11 220,6	121,9	11 752,0	102,9
pigs	135,7	134,5	11 808,8	91,5	12 809,0	111,0
poultry	356,4	106,3	10 266,6	107,7	10610,1	105,8
Milk	608,9	103,3	2885,5	97,5	2772,5	97,0
Eggs, thsd.	3410,1	124,0	479,7	85,1	513,1	100,7

*1 Except for small.*

Despite good dynamics, the situation could change, so 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, 2009 marked the 25th anniversary of FAPRI's founding. The FAPRI approach to such analysis and dissemination of results has evolved in a number of ways

during the last 25 years, including the application and further development of the analytic approach in a wide variety of countries and organizations and within FAPRI itself. 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 [8].

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 our clients might have for the model. Partners have different requirements in terms of commodity coverage, exposure to world markets, regional desegregation or scale of model.

There are many reasons why the Ukraine agricultural and agribusiness firms and the Government need enhanced analytical tools for market and policy analysis. Ukraine's role in world markets, especially as a grain exporter, has been growing rapidly and Ukraine has become a major supplier of rapeseed for biofuel production in the EU. Also new trade arrangements are in place since WTO accession and talks are underway for an expanded trade agreement with the EU. These and other changes in policy or market conditions can best be

analyzed in a comprehensive analytical system where relationships between market segments and different commodities are addressed consistently. Too often policy decisions are made without assessing the broader and longer term impacts of the decisions. This type of analysis can better inform the policy making process and prepare industry for likely changes in markets.

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 through 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. This 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 [7]

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 now 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.

**Summary.** To activate such an analytical system, we propose a practical system that uses existing research and the best available data on current market, technology and policy to become operational in relatively short period. After the creation of an analytical center and

an analytical system which would start evaluating near-term market and policy developments, the modeling system would constantly develop, which like data collection is an ongoing task. Models are updated constantly to reflect market conditions, policy changes and to incorporate the feedback of experts regarding the baseline projections and policy scenarios. A model will also improve as it is used to analyze more and more situations that have to be represented in terms of policy, technology or market structure.

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