

TM	Г. XXXV	Бр. 3	Стр. 993-1010	Ниш	јул - септембар	2011.
----	---------	-------	---------------	-----	-----------------	-------

UDK 631.1:339.1(100)

Прегледни чланак

Примљено: 11. 2. 2011.

Vesna Paraušić

Vladana Hamović

Drago Cvijanović

Institute of Agricultural Economics

Belgrade

## THE MAIN CHARACTERISTICS OF WORLD PRIMARY AGRICULTURAL COMMODITY MARKET\*

### Summary

During the study, we put emphasis on basic characteristics and world primary agricultural commodity market ways of functioning. This market is different in many elements from the markets of other goods and these differences primarily include: supply and demand characteristics for agricultural products, high volatility in agricultural commodity prices, high and significant government role, as well as high market concentration and vertically integrated food chains. All of these specifics are specially processed and the emphasis is put on developing and transition countries, which, due to world agricultural market specifics, have inferior and very vulnerable position in relation to developed countries.

**Key words:** agricultural commodity market, supply, demand, price volatility, role of government, market concentration

### INTRODUCTION

The study points out basic features of world primary agricultural commodity market. Every feature has detailed explanation, and the impact of these specifics on developing and transition countries position is specially processed. The study is structured in four main points:

---

vparausic@sezampro.rs, vladana\_h@mail.iep.bg.ac.rs, drago\_c@mail.iep.bg.ac.rs

\* This article represents a part of the Project III 46006 – Sustainable agriculture and rural development in the function of accomplishing strategic objectives of the Republic of Serbia in the Danubes region.

1. *Analysis of supply and demand factors in the market of agricultural products* – the study includes delineate demand and supply factors which produce the underlying trends in prices and which cause price variability around those trends.

2. *Price volatility and high product prices on world agricultural market* – at this point, the main factors that cause the high price volatility are emphasized; also, considering that in June 2008, prices of basic foods on international markets reached their highest levels for 30 years, the main factors that have caused this rise in prices are highlighted.

3. *Role of government on world primary agricultural commodity market* – agricultural sector in most countries has been more or less regulated by specific policies for centuries; at this point, the role of common agricultural policy EU stands out (which has an impact not only on the EU countries, but also on many others, especially on developing and transition countries), World Trade Organization standards, that are directed towards the liberalization of world agricultural product markets and reducing trade distorting domestic support in agriculture.

4. *Market concentration and vertically integrated food chains* – at this point, oligopolistic market structure of world agricultural commodity markets is particularly processed, which is increasingly dominated by large transnational trading, processing and distribution companies, which wield direct and increasing influence on what is produced and how.

#### *ANALYSIS OF SUPPLY AND DEMAND FACTORS IN THE MARKET OF AGRICULTURAL PRODUCTS*

Agricultural commodity prices are determined by a combination of the so-called market fundamentals of demand and supply and exogenous factors, such as the climate change (weather, water shortages, drought). In spite of intense research, there are still differences of opinion about the nature of price trends and variability. It is important to delineate *those factors driving demand and supply* that produce the underlying trends in prices and those that cause variability around those trends.

*Long-run changes in food demand* are primarily the result of *population and income growth*, but they are also influenced by *relative price changes* and the evolution of dietary patterns. In the past, technological progress reduced costs and induced supply expansion at a faster rate than population and income growth expanded demand, leading to a long-run relative decline in agricultural commodity prices. Recent circumstances may have been different in that demand growth, as a result of *income growth in emerging economies and biofuel demand*, may run ahead of supply expansion, so leading to price increases. Supply expansion may be constrained in the short term by the cost and availability of key inputs and other supply-side problems, and in the longer term by the availability of land and water resources, labour and climate change.

*In the short run, supply and demand for agricultural products are inelastic* and do not respond much to price changes, so supply and demand shocks can produce wide swings in prices. Supply shocks are perhaps most important because of the dependence of agricultural production on the weather, although demand shocks can be important too, especially for certain raw materials. The level of stocks in relation to demand is an important factor in commodity prices. If the “stock-to-use” ratio is low because stocks are low or demand is high or both, there will be upward pressure on prices. Markets and prices for agricultural commodities do not adjust immediately to supply or demand shocks. The effects of shocks tend to be less persistent when they are supply shocks – owing to bad weather for example – and more persistent in the case of demand shocks.

Prices of different commodities are linked through possible *substitution or complementarities in consumption or production*. These lead to “cross” effects of price changes from one commodity to another. For example, higher prices for maize will lead producers to grow more maize at the expense of other crops, reducing their supply and raising their prices; or increasing demand for livestock products will lead to increased feed demand and prices for cereals and oilseeds.

Activity analysis of basic supply and demand factors in the market of agricultural products may be based on a simple model<sup>1</sup> in which:

Demand ( $q^D$ ) is assumed to depend on income and prices:

$$q^D = q^D(Y, B, p) \quad (1)$$

where  $q^D$  = quantity demanded of the agricultural product;  $Y$  = income;  $p$  = price of the agricultural product;  $B$  = population size.

Supply is assumed to depend on prices and a supply shifter, which stands for the effect of technological change:

$$q^S = q^S(p, a) \quad (2)$$

where  $q^S$  = quantity supplied of the agricultural product and  $a$  = supply, higher due to technical change.

From equation (1) and (2) calculating the amount changes of requested and offered products in two consecutive time intervals, is obtained that:

$$\frac{dq^D}{q^D} = \eta \cdot \frac{dy}{y} + \epsilon_{q^D p}^D \frac{dP}{P} + \frac{dB}{B} \quad (3)$$

---

<sup>1</sup> Koester Ulrich and Ali El Agraa (2004): “The Common Agricultural Policy”, print in “European Union: Economics and Policies”, edited by Ali M. El-Agraa, 7 th Ed, Prentice Hall, 2004, page 359. The model does not include the savings of the household, cause it’s based on the assumption that the total realized income of households was spent in the same period.

The rate of demand change is dependent variable affected by elasticity of income ( $\eta$ ), rate of change of per capita income, price elasticity of demand ( $\varepsilon_{q \cdot p}^D$ ), rate of change in price ( $dP/P$ ) and rate of change in population.

$$\frac{dq^S}{q^S} = \varepsilon_{q \cdot p}^S \frac{dP}{P} + \frac{da}{a} \quad (4)$$

The rate of offer change is dependent variable affected by price elasticity of supply ( $\varepsilon_{q \cdot p}^S$ ) and the rate of technical change ( $da/a$ )

It is assumed that demand and supply are equated by the prevailing price ( $q^D = q^S$ ). Equating equation (3) and (4) and solving for the relative change in P results in:

$$\frac{dP}{P} = \frac{1}{\varepsilon_{q \cdot p}^D - \varepsilon_{q \cdot p}^S} \left( \frac{da}{a} - \eta \frac{dy}{y} + \frac{dB}{B} \right) \quad (5)$$

Where  $\eta$  = elasticity of income.

Many important factors of supply and demand of agricultural products can be identified on the basis of obtained equations. Namely, the relative change in prices of agricultural products is the result of the following factors:

$\varepsilon_{q \cdot p}^D$  = *price elasticity of demand*; concerning that the primary agricultural products are among the products necessary for life with no close substitute, demand for these products is inelastic, i.e. price elasticity of demand is less than 1 (many commodity-based products are viewed as necessities that must be purchased regardless of variations in the price); on the other side, demand price elasticity for higher quality products (eg organic food) may be an example of elastic demand (the demand for organic products is greatly influenced by consumers preferences appeared as a result of information about the quality of food, healthy lifestyle, etc.); also, changes in commodity prices can be barely perceivable at retail, as the price of basic commodities typically represents a small fraction of the final retail price for processed goods; in developing countries, where the degree of processing may be smaller, demand for the basic product can increase more quickly in response to lower world prices;

$\varepsilon_{q \cdot p}^S$  = *price elasticity of supply*; the price elasticity of supply is defined as a numerical measure of the responsiveness of the quantity supplied of product to a change in price of product alone (it is the measures the relationship between change in quantity supplied and a change in price); if supply is elastic, producers can increase output without a rise in cost or a time delay; if supply is inelastic, firms find it hard to change production in a given time period; for many agricultural products there are time lags in the production process which means that elasticity of supply is very low in the immediate or momentary time period (farmers

cannot scale production up or down quickly when prices change, especially where perennial crops are concerned);

$\eta = \text{elasticity of income}$ ; income increase will not always be followed by a proportional increase in demand for agricultural food products (Engel law effect); any increase in unsatisfactory low level of income will lead to significant increase in demand for food, but lower prices generally do not stimulate consumers in developed countries to increase their purchases of foods and other commodity-based products significantly; most primary agricultural products is classified in the category of necessary consumer goods, and is empirically proven that increase of income in the structure of family consumption leads to food costs reduce, and increases spending for so-called luxury products (Engel laws);

$da/a = \text{rate of technical change}$  (the reality of the last 50 years shows that technical change in agriculture has been large enough to offset the price increasing effects of income and population growth; as the elasticity of income declined with higher income and population growth somewhat flattened, technological progress in agriculture tended to lower food prices even more);

$\frac{dy}{y} = \text{rate of change of per capita income in the economy}$ ;

$\frac{dB}{B} = \text{rate of change in population}$ ;

#### *PRICE VOLATILITY AND HIGH PRODUCT PRICES ON WORLD AGRICULTURAL MARKET*

Agricultural markets tend to be volatile and volatility in prices stems from supply and demand shocks which are amplified by short term demand and supply inelasticity. The smaller demand price elasticity is, the greater instability will be. We should bear in mind that demand price elasticity of agricultural products decreases with increasing income (price elasticity for agricultural products decline with growing income). Actually, the revenue would be less volatile if the price elasticity of demand were larger than 0.5 in absolute terms<sup>2</sup>. Storage and interregional trade help mitigate fluctuations in regional production and prices, and taking into account the demand for storage and for interregional trade it is likely that the elasticity is larger than 0.5<sup>3</sup>.

---

<sup>2</sup> Authors Ulrich and Ali illustrated that with the help of some algebra (assumes: demand only depends on the price of product; supply is completely price inelastic; there is no storage and all that is produced has to be consumed in the same period). They find that percentage changes in price resulting from a 1% change in supply will be larger, the lower price elasticity of demand in absolute terms. Ibidem, page 389.

<sup>3</sup> Ibidem, page 389.

*Although the extent of volatility has declined over the last 20 years, prices of many agricultural commodities remain highly volatile*<sup>4</sup>. Spikes or drops in prices can be triggered by a drought or a bumper crop. They are prolonged and deepened by the fact that both supply and demand for commodities, especially perennials, respond slowly to price changes. When stocks are low and prices high, farmers can increase their planting, but they cannot compress the time it takes for crops to ripen to harvest (in the case of perennial crops that can take years). When farmers eventually do increase production, prices fall as supplies quickly outgrow demand in importing countries, given that demand does not grow significantly in response to lower prices. Overall, instability tends to be higher for agricultural raw materials and tropical beverages (cotton, coffee, fish, copper) than for temperate-zone products<sup>5</sup>. The former are key commodities for export earnings in developing countries and declining prices and price volatility cost both farmers and governments in the developing world dearly.

FAO report from 2009<sup>6</sup> points out that agricultural commodity prices *have always been highly variable, but around a long-run downward trend*<sup>6</sup>. At the same time, according to the mentioned source (FAO, 2009), in June 2008, the *prices of basic foods on international markets reached their highest levels for 30 years*, threatening the food security of the poor worldwide (many developing and least-developed countries are food importers and have seen their annual food import bills more than double since 2000). Since then, prices have declined, driven lower by the financial crisis, emerging world recession, falling oil prices and an appreciating US dollar. However, they are still high by recent historical standards and the structural problems underlying the vulnerability of developing countries to international price increases remain. Many factors contributed to the dramatic increase in world food prices:

1. production shortfalls;
2. low stock levels;
3. record oil prices;
4. biofuel demand (biofuel use of grains and oilseeds);
5. growing incomes in emerging economies;
6. depreciation of the US dollar and
7. speculation.

While it is difficult to determine their individual contributions quantitatively, some of these factors could have a persistent effect on the average level of prices. There are some features of the current situation, notably the historically *low stock levels for cereals and strong demand for*

<sup>4</sup> The State of Agricultural Commodity Markets, FAO 2004, page 21.

<sup>5</sup> Ibidem, page 21.

<sup>6</sup> The State of Agricultural Commodity Markets, FAO, 2009.

*biofuels*, that suggest that, in spite of the downward adjustments from the peak of early 2008, the recent high prices may well not be short-lived but could persist for some years. Some Analysts wonder whether new linkages between food and energy markets have broken the long-run downward trend in real agricultural commodity prices (the end of so-called “cheap food”)<sup>7</sup>.

Soaring food prices came as a shock partly because consumers throughout the world had become accustomed to the notion of so-called “cheap food”. Up until 2006, the real cost of the global food basket had fallen by almost one-half in the previous 30 years, with prices of many foodstuffs falling on average by 2–3 percent per year in real terms. Technological advances greatly reduced the cost of producing foodstuffs and this, together with widespread subsidies in countries of the Organization for Economic Co-operation and Development (OECD) that rendered more efficient and cheaper production elsewhere unprofitable, entrenched the role of a few countries in supplying the world with food. This supply-driven agricultural paradigm sent real prices spiralling downward on a trend lasting for decades. Added to this, changes in the market and policy setting have been instrumental in reducing stock levels and have led to far more planned dependence on imports to meet food needs. Put together, these developments have resulted in a significant role for major exporting countries to supply international markets as needed. Therefore, it is not surprising that when production shortages occur in such countries, particularly in consecutive years, global supplies are stretched and the ensuing market tightness is manifest in both higher prices and higher volatility. Against this backdrop, the world’s growing demand for agricultural commodities, driven by rising global incomes and population and then expansion in biofuel production, left major exporters with little opportunity to replenish stocks.

Author Ronald Trostle<sup>8</sup> points out that world market prices for major food commodities such as grains and vegetable oils have risen sharply during the last 2 years, as a consequence of the following factors:

1. Long-term trends that led to slower growth in production and rapid growth in demand contributed to a sharp downward trend in world aggregate stocks of grains and oilseeds that began in 1999;

2. Recent factors that have further tightened world markets include increased global demand for biofuels feedstocks and adverse weather conditions in 2006 and 2007 in some major grain- and oilseed-producing areas.

---

<sup>7</sup> Ibidem.

<sup>8</sup> Ronald Trostle Global Agricultural Supply and Demand: Factors Contributing to the Recent Increase in Food Commodity Prices, USDA United States Department of Agriculture, July 2008, <http://www.ers.usda.gov/Publications/WRS0801/>

3. Devaluation of the U.S. dollar (declining value of the U.S. dollar), rising energy prices, increases in agricultural costs of production, growth in foreign exchange holdings by major food-importing countries, and protective policies adopted by some exporting and importing countries to mitigate their own food price inflation.

Some broad indication of the relative impacts on food prices of the various factors can be gleaned from simulations with the OECD-FAO Aglink-Cosimo model of world agricultural markets<sup>9</sup>. This model is used to generate market projections over the medium term on the basis of assumptions concerning the future values of key variables affecting markets and prices. Varying these assumptions and comparing the resulting projections gives an indication of the strength of each influence. The five key assumptions examined were: biofuel use of grains and oilseeds; petroleum prices; income growth in major developing economies: Brazil, China, India, Indonesia and South Africa; exchange rate of the US dollar relative to the currencies of all other countries and crop yields.

*High product prices on international markets as opportunity for farmers in developing and transition countries.* In numerous reports FAO<sup>10</sup> points out that high product prices on international markets did not prove to be an opportunity for farmers in developing and transition countries to invest and raise their production and productivity. The reasons why high prices did not filter through smallholders, lie in the fact that markets in these countries are not sufficiently integrated into the global trends (EU membership, or WTO), what causes high transaction costs and impedes flow of goods, funds and information<sup>11</sup>. Also, necessary physical infrastructure and institutions are lacking. In essence, farmers in these countries have the following development restrictions:

1. lack of marketing chains and information channels for bringing any increase in production to market; during the 1980s and 1990s in many developing and transition countries the *abolition of the state marketing boards* that had previously exerted monopoly control over domestic trade and prices for agricultural commodities has left an institutional vacuum (neither government nor the private sector has taken on these roles); collapse of the planned economy has deprived farmers (especially small ones) of any channels for obtaining inputs, or for selling, storing, or

---

<sup>9</sup> Aglink- Cosimo provides a comprehensive dynamic economic and policy-specific representation of 58 of the world's major producing and trading countries and regions for the main temperate-zone commodities as well as rice, sugar and palm oil. Ethanol and biodiesel are also now included. As most models of this type, the model is driven by elasticities, technical parameters and policy variables. OECD-FAO Agricultural Outlook 2008-2017, 2008.

<sup>10</sup> FAO 2009 (page 6 and page 30); FAO 2004 (page 24).

<sup>11</sup> Regional integration schemes with trading agreements and WTO (by setting rules for trade) helped to integrate agricultural markets.



processing output; farmers have been confronted by loss of access to credit and soaring prices for inputs, and, as a result of this, both yields and quality of commodities have fallen;

2. their access to affordable inputs (seeds and fertilizers) was limited (incentives to invest and produce depend on how much the costs of inputs such as seeds and fertilizers have risen); higher costs for fertilizer, fuel, and seeds could cause farmers to plant less than they otherwise would have, or to shift to crops requiring fewer inputs<sup>12</sup>;

3. their access to affordable credit was limited (undeveloped systems of agricultural banking and finance);

4. modern farming techniques and technology was limited, where-with producers are unable to increase productivity and thus create the possibility to use lower costs and faster than competitors achieve profits;

5. undeveloped physical infrastructure (lack of transport, undeveloped logistics);

6. public expenditures in agriculture have dwindled and significantly lower than in EU countries (internal support to agriculture does not provide income support to farmers);

7. lack of well-developed legislative and judicial systems, especially system of commercial law that protects property and enforces contracts.

All previous deficiencies prevent the farmers from: (1) use high product prices on international markets; (2) to break their dependence on traditional primary commodities and diversify the agricultural products export of high added value<sup>13</sup>; (3) and, at the same time “leave small-holders vulnerable to price volatility and exploitation by trading companies that have often stepped in to replace the state monopoly with a private one<sup>14</sup>”.

*Price volatility and developing countries.* Many developing countries (in sub-Saharan Africa or Latin America and the Caribbean) depend on exports of a small number of agricultural commodities (sugar, cocoa, coffee, cotton lint or bananas), even a single commodity, for a large share of their export revenues. This concentration leaves such countries *highly*

---

<sup>12</sup> The prices of key inputs such as energy and fertilizer increased along with product prices – sometimes faster – so the incentive to produce more actually weakened. FAO 2009, page 5.

<sup>13</sup> Diversification (shift to new crops, conversion to organic farming, meet the high quality standards) requires access to the credit, investment, training, standard introduction and other resources they would need to take advantage of these opportunities. Regarding the introduction of standards, it should be pointed out that most manufacturers do not accepted standards of food safety (Food Safety Standards) or state (regional) standards, or marketing or private standards (HACCP, Global Gap). The certification process is very expensive, especially for small farmers (the majority of countries have no lack of local certification bodies and must rely on foreign agencies.

<sup>14</sup> FAO 2004, page 24.

*vulnerable to unfavorable market or climatic conditions.* Over the past 20 years, real prices for many of the primary commodities of these countries depend upon *have fluctuated widely and fallen significantly overall.* Declines and fluctuations in export earnings have battered income, investment and employment in these countries and left many of them deeply in debt. The International Monetary Fund (IMF) and World Bank have classified 42 countries as Heavily Indebted Poor Countries (HIPCs). Thirty-seven of these rely on primary commodities for more than half of their merchandise export earnings<sup>15</sup>.

#### *ROLE OF GOVERNMENT ON WORLD PRIMARY AGRICULTURAL COMMODITY MARKET*

Agricultural sector in most countries has been more or less regulated by specific policies for centuries. For example, agricultural trade is the most distorted sector of trade in goods. It is characterized by export subsidies, tariffs and very high levels of government support to primary producers in rich developed countries. In no other area does domestic support distort international markets to the extent that it does in agriculture. Millions of farmers around the world, including in developing and transition countries, are unfairly disadvantaged in the world market. Agricultural subsidies in many developed countries generate excess production, which puts downward pressure on international markets.

Authors (Ulrich Koester and Ali El Agra) analyze six reasons for this special treatment (or governmental interference in agricultural markets) (Koester and Agra 2004, 355–62):

1. *Food security concerns*; if markets were to function perfectly, fluctuations in regional production would cause no concern as long as the world supply was stable (regional trade and stockpiling could easily stabilize regional food consumption); however, markets are not perfect: interregional trade may not stabilize consumption, as markets are not perfectly integrated due to high transaction costs; specific policies may hinder interregional trade flows; private stockholders may not hold high enough stocks in order to stabilize consumption on the regional level, making stockpiling a risky investment; thus, most countries have food security included in the list of their agricultural policy objectives; how governments should intervene in order to achieve the objective would depend on the size of market failure and on available policy alternatives;

2. *Agricultural income*; there is a widely held perception that income from farming does not increase as much as non agricultural income in a growing economy; the argument is based on a closed economy and

---

<sup>15</sup> Ibidem, page 20.

limited mobility of labour; if sectoral labour markets are not well integrated, labour income in one sector may deviate from that in others, but if they are integrated (they are more integrated in developed market economies, where information is available and transaction cost are low), differences in labour income will reflect preferences for work, living in the countryside, qualifications, preferences for the environment, etc;

3. *Efficiency concerns*; market failure on land, labour markets and markets for rural finance provide rationales for government intervention in order to improve the efficiency of agriculture;

4. *Stability of markets*; agricultural markets tend to be volatile; storage and interregional trade help mitigate fluctuations in regional production and prices; so domestic market policies to stabilize price fluctuations are less needed nowadays than in past centuries;

5. *Food safety concerns*; control of the food chain is needed and it is a genuine task for a government to take care of this type of market failure (new technologies which are based on biotechnology have created new production processes and new products which are not always safe; also, new products have to be tested before they are allowed to enter the market, etc.);

6. *Environmental concerns*; the impact of agricultural production on the environment has become of higher interest; by products from agriculture can be “bads” or goods which are non marketed goods that increase welfare.

Although all the countries justify their influence on the agricultural products market with this and other reasons, the question is how much is the state role in the agricultural products market justified, necessary (how much is contributing to more efficient allocation of resources), meaning how much and when is state pulling strings and, as being such, causing market distortions.

*Distorted price policies measures were present in practice of almost all countries in the past, especially in EU countries.* Common Agricultural Policy had an extremely distorted, protectionist character (price support, export subsidies, high agricultural tariffs), who, despite all the reforms, still retained in large percentage. The need of solving internal problems, and need for adjustment to Doha Declaration (World Trade Organization, 2001)<sup>16</sup> have caused a number of CAP reform, starting from the end 60's of the last century until today, which were aimed at increasing the presence of measures with less impact on market disruptions. With first CAP's radical reform (so-called McSharry's reform) from 1992. the EU began to dismantle the price support system, reducing guaranteed prices and compensating farmers with a "direct payment" less

---

<sup>16</sup> WT/MIN(01)/DEC/1, Ministerial Declaration, adopted on 14. November 2001.

closely related to levels of production ("decoupled" subsidies from production levels; Single Payment Scheme – SPS). The next reforms (2003-2008) were in the same direction: (1) market reform policies (the new reforms have caused the reduction in intervention price, retained high tariffs and export subsidies were available to other member countries); (2) further "decoupled" subsidies from production levels and linked payments to food safety, animal welfare, and environmental standards (instead of paying farmers to produce more, the EU now makes payments conditional on farmers meeting environmental and animal welfare standards and keeping their land in good condition). However, despite all the CAP reform, distorted effect on world agricultural market comes from *export subsidies and high domestic support*.<sup>17</sup> With high incentives, the EU lowers prices on world market, a farmers in developing and transition countries suffer from lost market share and unfair competition even though they are able to produce at lower costs<sup>18</sup>. Also, the EU market intervention are in the process of deregulation, a current range of measures is very large of foreign trade regulation, intervention buying and other forms of withdrawal of product from the market, support to consumption of certain products, production quotas, support to manufacturer organizations in fruit and vegetable<sup>19</sup>. We should also add that although tariffs (tariffs have generally been falling), subsidies and other trade-distorting policies in developed countries have to a large extent eroded the market share and revenues of exports by developing countries, policies, priorities and conditions within the developing countries themselves have also contributed to their loss of competitiveness and inability to diversify into more profitable and less volatile sectors<sup>20</sup>.

Although protectionist measures in trade and investment still exist, as well as the interest conflict of developed and developing countries, which further strengthens by the increasing importance of transnational companies, they are, in the current time, limited by *World Trade Organization* rules, which are primarily directed towards the liberalization of world agricultural product markets and towards reducing trade distorting domestic support in agriculture. Doha round of negotiations within the WTO (negotiations have began in 2001th, and the end is expected 2010th year) means "establish a fair and market-oriented trading system in order

---

<sup>17</sup> The largest allocations in the budget for agriculture and rural development of the EU are direct aid and rural development  
[http://eur-lex.europa.eu/budget/data/D2009\\_VOL4/EN/nmc-titleN123A5/index.html](http://eur-lex.europa.eu/budget/data/D2009_VOL4/EN/nmc-titleN123A5/index.html)

<sup>18</sup> In the case of cotton, while there are no export subsidies in the United States and the EU, various forms of direct support allow farmers to produce cotton that is then exported at prices below the costs of production. FAO 20004, page 23.

<sup>19</sup> Erjavec, Rednak, Volk, Bogdanov 2009, 23.

<sup>20</sup> FAO, 2004, page 24.

to correct and prevent restrictions and distortions in world agricultural markets”<sup>21</sup>. With Doha Declaration, in the agricultural sector, an agreement for negotiations between member countries of WTO was reached, with following aims: “(1) substantial improvements in market access; (2) reductions of, with a view to phasing out, all forms of export subsidies; and (3) substantial reductions in trade-distorting domestic support”<sup>22</sup>. In order to ensure compliance with WTO rules and standards in the coming years, the system of direct payments in EU will certainly remain, but it will tighten the conditions for obtaining these funds, in other words, direct payments will be reduced. Market interventions are also affected by changes arising from WTO negotiations, where the Doha round will, when completed, lead to radical reduction of import customs duties and abolition of export subsidies, so as to reducing trade distorted forms of domestic support to agriculture. However, a foreign trade protection complex system will surely remain, and only the policy for rural development will continue to strengthen.

*Developing and transition countries* are burdened by numerous system problems, with high budget deficit. Their agricultural budget is small, and measures of agricultural policy are unstable. Therefore, liberalization in the short run could have a negative impact on food-importing, as the removal of tariffs and subsidies would lead to higher food prices and import bills (many of developing countries are net food importers). Perhaps even more significant, the reduction by developing countries of import tariffs under a multilateral agreement exposes their domestic agriculture sectors to intensified international competition and a threat of disruptive import surges. Although there is general agreement that, in aggregate and in the longer run, trade reforms should have a positive effect on development and growth, and hence on reducing poverty and food insecurity, in the short run liberalization may offer little benefit and can impose significant costs on developing and transition countries. In light of these concerns, it is not surprising that the Doha Round of negotiations has been preoccupied to some extent with measures to mitigate those effects under the broad heading of special and differential treatment<sup>23</sup>. Gradual foreign trade liberalization, special and differential treatment in trade negotiations, with intensive processes of strengthening domestic productivity and competitiveness, may be the only way to preserve the survival of agriculture and many agricultural producers in these countries.

---

<sup>21</sup> WT/MIN(01)/DEC/1, Ministerial Declaration, adopted on 14. November 2001, page 3.

<sup>22</sup> Ibidem, page 3.

<sup>23</sup> Special and differential treatment for developing countries are an integral part of the WTO Agreements, WT/MIN(01)/DEC/1, Ministerial Declaration, adopted on 14. November 2001, page 9.

*MARKET CONCENTRATION AND  
VERTICALLY INTEGRATED FOOD CHAINS*

World agricultural commodity markets, particularly those of high-value crops and processed products, are increasingly dominated by large transnational trading, processing and distribution companies, which wield direct and increasing influence on *what is produced and how*.<sup>24</sup> Studies have suggested that the food sector in developing and transition economies is taking on the attributes relating to the role of dominant food processors and retailers in developed countries. Control of commodity value chains by a small number of powerful and large transnational corporations can be seen at three levels<sup>25</sup>:

1. *Few large companies dominate export trade in developing countries.* In exporting developing countries, particularly following the elimination of many marketing boards, large companies with warehousing and shipping facilities have been able to exploit their financial and logistical advantages. Many now buy produce directly from farmers, specifying their requirements and prices. Intensified competition favours those farmers and traders with access to cheaper finance and good logistics. In Kenya, for example, exports of fruits, vegetables and cut flowers have become the second biggest source of foreign exchange. The industry earns US\$300 million per year and employs more than 70 000 people. However, as the scale of exports has grown, the number of suppliers and the share produced by smallholders and shipped by small- and medium-sized domestic exporters has shrunk. Prior to the horticultural export boom in the 1990s, smallholders produced 70 percent of fruits and vegetables exported from Kenya. By the end of the 1990s, 40 percent of the produce was grown on farms owned or leased directly by importers in the developed countries and another 42 percent was produced on large commercial farms. Smallholders' share of this lucrative business had dwindled to just 18 percent. Among exporters, seven large companies controlled more than 75 percent of the market.

2. *Concentration in international trade.* At the international level, a few vertically integrated companies have gained increasing control over agricultural trade. A handful of vertically integrated companies now dominate the production, distribution and international trade of both oilseeds and oils. Just three global companies control 80 percent of the soybean crushing market in Europe and more than 70 percent in the United States. Grain trading, storage, processing and milling is also dominated

---

<sup>24</sup> On its way from farmer to consumer, for example, nearly 40 percent of the world's coffee is traded by just four companies and 45 percent is processed by just three coffee-roasting firms. FAO, 2004, page 30.

<sup>25</sup> Ibidem, page 30-31.

by a few big companies (three or four companies control 60 percent of the terminal grainhandling facilities, 61 percent of the flour milling, 81 percent of the maize exports).

3. *Supermarkets dominate retailing.* At the retail level, supermarkets have grown rapidly in both developed and developing countries. Worldwide, the top 30 supermarket chains now control almost one-third of grocery sales. At the national level, the five biggest retailers control between 30 and 96 percent of food retailing in the EU and the United States. Supermarkets' domination of the market gives them significant leverage over production, distribution and trade including through direct involvement with developing country suppliers. To simplify operations, most supermarkets prefer to work with a limited number of suppliers who have the resources to meet their quality requirements and delivery schedules (the majority of smallholders are left out).

Oligopolists can maximize their profit by creating cartels and demonstrating monopoly-type behaviors (rivalry is overcome through cooperation and collusion). Processors and retailers may reap most of the benefits, leaving little or nothing for farmers, particular in developing and transition countries, and are primarily typical for underdeveloped institutions (Enforcing Contracts, the protection of property rights, etc.). When markets bring together large numbers of competing suppliers against a handful of large-scale buyers, the buyers are likely to have most leverage in setting prices. When the buyers are also linked to processors and retailers in vertically integrated commodity chains, they are in a strong position to capture a greater share of the value of the final product for traders, processors and retailers<sup>26</sup>.

Oligopoly/oligopsony is difficult to avoid, and these market structures are not always undesirable. Reliable quantities and consistent quality are key to the business operations of the transnational companies and they have developed their relationships with suppliers so as to ensure them. This includes collaboration in product development, technology transfer and training, contract farming, financial assistance (support), sharing information. For some producers and exporters these changes are opening up unprecedented opportunities.

Although oligopoly/oligopsony can damage competition and enable large companies to create high profits at consumers' and producers' expense and expense of economic advance in general, their behavior, di-

---

<sup>26</sup> Growers' prices do typically represent a small fraction of the retail price for finished products, ranging from as low as 4 percent for raw cotton to 28 percent for cocoa. Even with bananas, which require almost no processing, international trading companies, distributors and retailers claim 88 percent of the retail price; less than 12 percent goes to the producing countries and barely 2 percent to the plantation workers. *Ibidem*, page 31.

rected against competitors, is limited by *anti-monopoly laws*, as well as by *personal interests of each oligopoly member*. However, what is obvious is that the states, or governments, do not show enough interest (political will) to eliminate or at least reduce (through process control and limiting the concentration of capital, through control of abusing dominant position by individual market participants, etc.) the current market disruptions (market failures) by passing through and applying the antitrust laws. This problem is particularly pronounced in developing and transition countries, which suffer from underdeveloped institutions (particularly the legislature and judiciary), high corruption, high budget deficit and external debt, a small agricultural budget, and inconsistent agricultural policies. Therefore, it seems that, in these countries, adjusting the production levels and purchase prices by the interests of trading companies, distributors and retailers in a much greater extent than in developed countries, has its negative impact on primary agricultural producers income and profitability.

#### CONCLUSION

Agricultural commodity prices are determined by a combination of the so-called market fundamentals of demand and supply (price elasticity of demand; price elasticity of supply; elasticity of income) and exogenous factors, such as the climate change (weather, water shortages, drought), rate of technical change, rate of change of per capita income, rate of change in population. Although the agricultural commodity prices have always been highly variable (around a long-run downward trend), in June 2008, the prices of basic foods on international markets reached their highest levels for 30 years. Since then, prices have declined, but they are still high by recent historical standards and the structural problems underlying the vulnerability of developing countries to international price increases remain. Many factors contributed to the dramatic increase in world food prices: production shortfalls; low stock levels; record oil prices; biofuel demand (biofuel use of grains and oilseeds); growing incomes in emerging economies; depreciation of the US dollar and speculation. The need to protect consumers from higher food prices must be balanced against maintaining incentives for productivity-raising investment and supply response. Policy measures need to be targeted, non-distortionary and positive towards agricultural investment. In assessing prospects for the future, there are a number of uncertainties and concerns: (1) *global economic growth* (if rapid growth continues, particularly in developing countries, it will continue to put upward pressure on food commodity prices through increases in food demand); (2) *energy prices* (if petroleum prices continue to rise, costs of agricultural production will rise, as will the cost of processing, and the cost of transporting products to



markets); (3) *biofuels production* (with sustained higher levels of biofuels-related demand, world food commodity prices are not projected to retreat to past levels). However, several years into the future, the underlying long-term trend in rapidly increasing global demand is expected once again to be the primary contributor to future upward pressure on food commodity prices.

The study also points out that high product prices on international markets did not prove to be an opportunity for farmers in developing and transition countries to invest and raise their production and productivity. The reasons why high prices did not filter through smallholders lie in the fact that markets in these countries are not sufficiently integrated into global flows, which causes high transaction costs and impedes flow of goods, funds and information. What is also very important is missing - physical infrastructure and institutions. Also, agricultural subsidies in many developed countries generate excess production, which puts downward pressure on international markets. In particular, the reduction of long-standing distortions to global agricultural production and trade is critical to achieving food security and higher export revenues from food exports for most developing and transition countries. Many developing countries need international support to overcome budgetary constraints and to identify and implement appropriate policies. Developed countries also need to consider the impacts of their agriculture, trade and energy policies on international food prices and availability.

Another characteristic of agricultural world commodity market is particularly emphasized, and it is oligopsony market structure. Studies have suggested that the food sector in developing and transition economies is taking on the attributes relating to the role of dominant food processors and retailers in developed countries. Oligopolists can maximise their profit by creating cartels and demonstrating monopoly-type behaviors (rivalry is overcome through cooperation and collusion). Processors and retailers may reap most of the benefits, leaving little or nothing for farmers. This problem is particularly pronounced in developing and transition countries, where farmers can not count on a large and consistent state support, and when the business environment is under highly underdeveloped institutions of legislative and judicial powers, which do not guarantee the protection of fundamental rights: underdeveloped strengthening and protection of competition policy, inefficient antitrust laws application, enforcing contracts, protection of property rights, high corruption, etc. Therefore, it seems that, in these countries, adjusting the production levels and purchase prices to the interests of trading companies, distributors and retailers in much greater extent than in developed countries, its negative impact has on primary agricultural producers income and profitability.

## LITERATURE

- Agricultural Outlook 2008–2017*. 2008. OECD-FAO.
- Erjavec, Emil, Miroslav Rednak, Tinca Volk, and Natalija Bogdanov. 2009. Challenges of agriculture of the Western Balkans in the perspective of EU accession. In *Agrarian economy of Serbia and European Integrations: Where are we now and how further on?*, edited by Danilo Tomić and Miladin Ševarlić. Novi Sad: Serbian association of agricultural economists.
- Koester Ulrich and Ali M. El-Agraa. 2004. The Common Agricultural Policy. In *European Union. Economics and policies*, 7 th Ed, edited by Ali M. El-Agraa, 355–62. Prentice Hall.
- The state of agricultural commodity markets*. FAO 2004.
- The state of agricultural commodity markets: High food prices and the food crisis – Experiences and lessons learned*. FAO, 2009.
- Trostle, Ronald. Global Agricultural Supply and Demand: Factors Contributing to the Recent Increase in Food Commodity Prices. *Outlook Report No. (WRS-0801)*, USDA United States Department of Agriculture, July 2008, <http://www.ers.usda.gov/Publications/WRS0801/>
- WT/MIN(01)/DEC/1, Ministerial Declaration, adopted on 14. November 2001 [http://eur-lex.europa.eu/budget/data/D2009\\_VOL4/EN/nmc-titleN123A5/index.html](http://eur-lex.europa.eu/budget/data/D2009_VOL4/EN/nmc-titleN123A5/index.html)

Весна Параушић, Владана Хамовић, Драго Цвијановић, Београд

## ГЛАВНЕ ОДЛИКЕ СВЕТСКОГ ТРЖИШТА ПРИМАРНИХ ПОЉОПРИВРЕДНИХ ДОБАРА

### Резиме

Током истраживања, акценат је бачен на основне одлике и начине функционисања светског тржишта примарних пољопривредних добара. Ово тржиште се умногоме разликује од тржишта других добара, а те разлике првенствено укључују: одлике понуде и потражње пољопривредних производа, изразиту непостојаност цена пољопривредних добара, велику и значајну улогу владе, као и високу концентрацију тржишта и вертикално интегрисане ланце исхране. Све ове специфичности су посебно обрађене с нагласком на земље у развоју и транзицији, које, услед управо тих специфичности светског пољопривредног тржишта, заузимају инфериорну и веома осетљиву позицију у односу на развијене земље.

**Кључне речи:** тржиште пољопривредних добара, понуда, потражња, непостојаност цена, улога владе, концентрација тржишта.