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Meat production: global and Ukraine trends

Scientific problem. Ukraine as the World Trade Organization (WTO) members fully feels global food market influence on the national food trading processes. Practically in all post-Soviet countries, so as in Ukraine, exist as influential advocates of openness of the economics, and those who think the main support of domestic producers, not focusing on the fact that this support is provided by the domestic consumer or the taxpayer (usually these concepts practically not differ). WTO membership conditions still remain some possibilities of the world market influence limiting on the production and consumption level inside the country. However, consider the process of meat production and consumption purely endogenous would be mistaken. The President of Ukraine did not sign the Law «About the Food Security» that contains provisions about limiting the import of food (no more than 30% of the national consumption of any commodity item) [9]. However, it is not executed in practice, and the consumption shares a number of imports headings have a stable growth. The world market of fish, meat and poultry is growing recent years, and the estimated volume in 2015 will reach $ 640 billion [13]. Demand for meat products is ensured by increasing the level of urbanization and per capita income in South Asia. Despite the meat consumption slow down tendency in developed countries, the global growth trend is prevailing. It should be noted that main world's beef importer is Russia, which is characterized by a significant negative balance of agricultural export and import [4].

The main meat producer tendency concerned India which rapidly increasing its world export share by producing inexpensive varieties beef and veal that are demanded in South-East Asia markets. The major share in the global production and consumption has pork (37% – 109 million tons in 2011), but recent years poultry had higher annual growth rate (3%), and the its world production and consumption reached 101 million tons in 2011 [14].

We now turn to the Ukraine meat products production and consumption. The agricultural sector transition to the market economy had more slow pace than in other Ukrainian economy branches. Even in the first half of the 90-ies of XX century, state allocated substantial funds to support the dying forms of agricultural management (collective and state farms). However, by the second half of the 90's it became apparent futility and ineffectiveness of this support. Gradually, in the village began to appear new forms of economic activity, which has now developed into three basic agricultural organizational structures: rural households, agricultural enterprises and farms. Households are the owners of land shares and rent them out to farmers and agricultural businesses. Last are actively investing in the production of crops and provide domestic consumption and export. Beef production is not considered as attractive investment and is provided by small-scale producers (households). Significant investments are observed in the poultry production and recently in pig breeding. Notwithstanding the provisions have not logged into force of the law «About food security» and the continuing need for a rational and balanced nutrition [8], at the present stage of development of the market of meat products in Ukraine is characterized by its considerable dependence through imports. According to the State Statistics Committee of

Ukraine, Ukrainians consume about 61 kg of meat and meat products per year, which is 40% less than the norm. [3] There is a view that «Ukraine's meat production sector must be export-oriented and 2030 beef exports must be close to 1 million tons». [12]. In a market economy, the development of any industry brunch depends on its profit attractiveness, which is primarily determined by the stable consumer demand for the products of the industry. In addition, in an open economy, domestic producers have to operate in a highly competitive with the world's major manufacturers of this type of product.

Analysis of recent researches and publications. The problem of the Ukrainian nation is a healthy balanced nutrition**,** but it is impossible without eating meat as a food containing 60% protein, which employs people [5].

The market of meat and meat products should be considered as a component of the food market, which consists of individual market segments (market of beef, pork market, the market of sheep and goats meat, poultry market [13]). «The essence of the meat market and products of its treatments can be defined as an integrated, open organizational and economic system that is being developed under the influence of factors internal and external environment and consists of a set of enterprises that are involved in the production, processing, storage, transportation and sale of» [8]

Proposal for meat products depends on the following factors: demographic (age of consumer, family, locality of residence – rural or urban), behavioral (motivation to buy this meat product), the level of solvency of consumers (income of consumer, which in Ukraine is at a low level). A lot of importance is the economic and political impact on the demand and supply of meat in Ukraine. Opinion Ukrainian scientists agree that « the Ukraine population deterioration in dietary habits is connected with a sharp decrease in its revenues» [7, 106]. The proposal is influenced by such factors as: the level of living of the rural population, the financial and economic position of agricultural enterprises, innovative approaches that are used in the enterprise, technology of growing, resource potential, the gene pool of the enterprise [1]. Questions of impact of accession to the WTO on the development of agricultural enterprises in Ukraine are considered in Yatsenko's work [10]. In Kozak's work is showed the competitiveness of agricultural producers in Ukraine [6] in an open economy (membership to the WTO). As for the trends of the global food market, in work [2] through a detailed analysis of time series of price factors for basic food produced by separating the main components of variation in the pricing process, which include: trend, cyclical, seasonal and random components[2]. It is shown that the main drivers of price trends in the global food market are changes in world energy prices and variations of the real exchange rate of the U.S. dollar. In last scientific papers the transition mechanisms of world market tendencies reduction on meat Ukraine market did not observed.

The objective of the article. Relevance of the research problem based on the needing to review trends in livestock and meat market of Ukraine in the conditions of the current system of institutional rules and methods of state regulation and stimulation of the agricultural sector of the economy, which will solve the issues of rational use of market methods in a significant influence of the world market of meat products and limited protection of the domestic market. Paper purpose is to analyze trends of meat production in Ukraine for certain types of commercial products in order to forecast the consumption and import opportunities in the short and middle term.

Statement of the main results of the study. Analysis of the trends that are observed in the production of certain commodity positions shows a steady increase in national poultry production, which is the main component of the food allowance of meat Ukrainians. Pork production also strengthened position in the domestic market recently. The number of cattle is reduced, but the forward-looking estimates give reason to believe that a possible change in trend**.** For the analysis, we used annual data FAOStat [12], as even internal statistical information about production, export, import of meat products is not in the public domain, and the one that is open, is highly unsystematic and inconsistent.

Trends of production meat products in Ukraine and in the world

Consider the production of the main types of meat production in Ukraine – beef, pork and chicken. The trend line of beef production represents by an exponential, which shows that production is falling since 1992 (Fig. 1). It means practically total lack of beef production investment and gradual degradation of the few companies that support the development of this industry. At this stage of the development of industry's potential rearing of cattle in Ukraine is hardly ever used. The sector which can give profits after 6-7 years is considered as nonintersecting for the investors. As a result is a relatively high price of beef (prices of pork and chicken meat in Ukraine are below) and low demand generated by the low-income population. We analyze the time-dependence of pork production in Ukraine since 1992. At the initial stage, as in all Ukraine's economy, there was a decline in production, and only after 2007 pork production began to grow. Therefore, this time dependence on the time interval from 1992 to 2010 is best approximated by a quadratic function (parabola), although the such dependence using for the prediction would be incorrect because you cannot expect continuous growth in production with a stable-increasing rate. In comparison with the beef, the population has a bigger opportunity to buy pork, which is cheaper than beef as elsewhere in the world Payback period of investment pork projects is significantly lower than in the production of beef. [7, 107]

Poultry production is showed since 1997 (fig. 1). Before this time it was recession of production, and since 1997 it started to grow at a rate of 14%. The reason of this is a rapid return of production (fig.1). Chicken - the cheapest meat of all meat products in Ukraine, so it becomes a major component of the supply of meat products for the population.

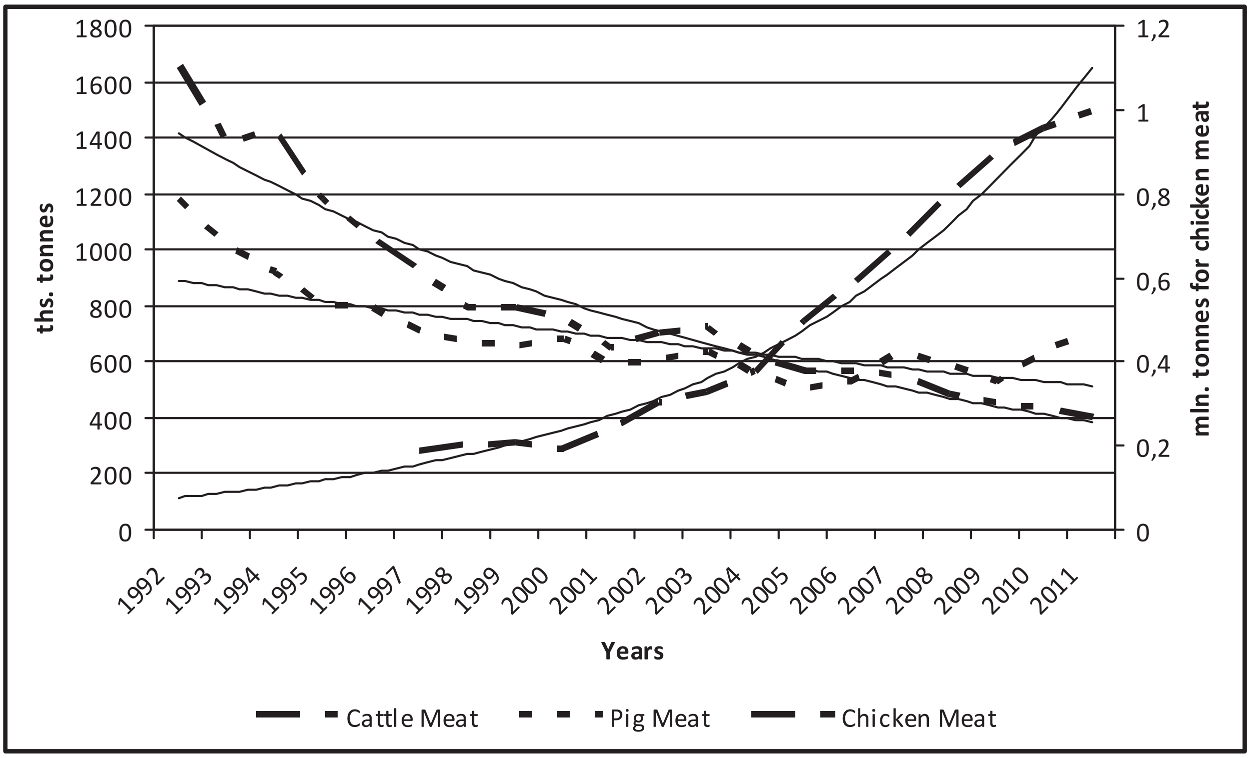

Fig. 1. Production of beef, pork and poultry in Ukraine

The source: [12]

Consider how the trend of the domestic Ukrainian market sorts compare with the trend of world production of the same meat. First of all, it should be noted a steady increase world production in three meat trade positions, which practically does not react to shakes and shocks of the global economic system (Fig. 2). The highest rate of increase has chicken production (5% per year) and in the nearest future we can predict the excess of poultry production over the production of pork, as FAOStat experts predicted [12]. Pork production has growing at a rate of 2.9% per year and the production of the most expensive meat – beef – is growing steadily at a rate of 1.4% per year. As we can see (fig. 1), the trend of development of the Ukrainian meat industry does not fully correspond to the trends that are observed in the world. It is continuing decline of beef production, and only last years pork production began to increase.

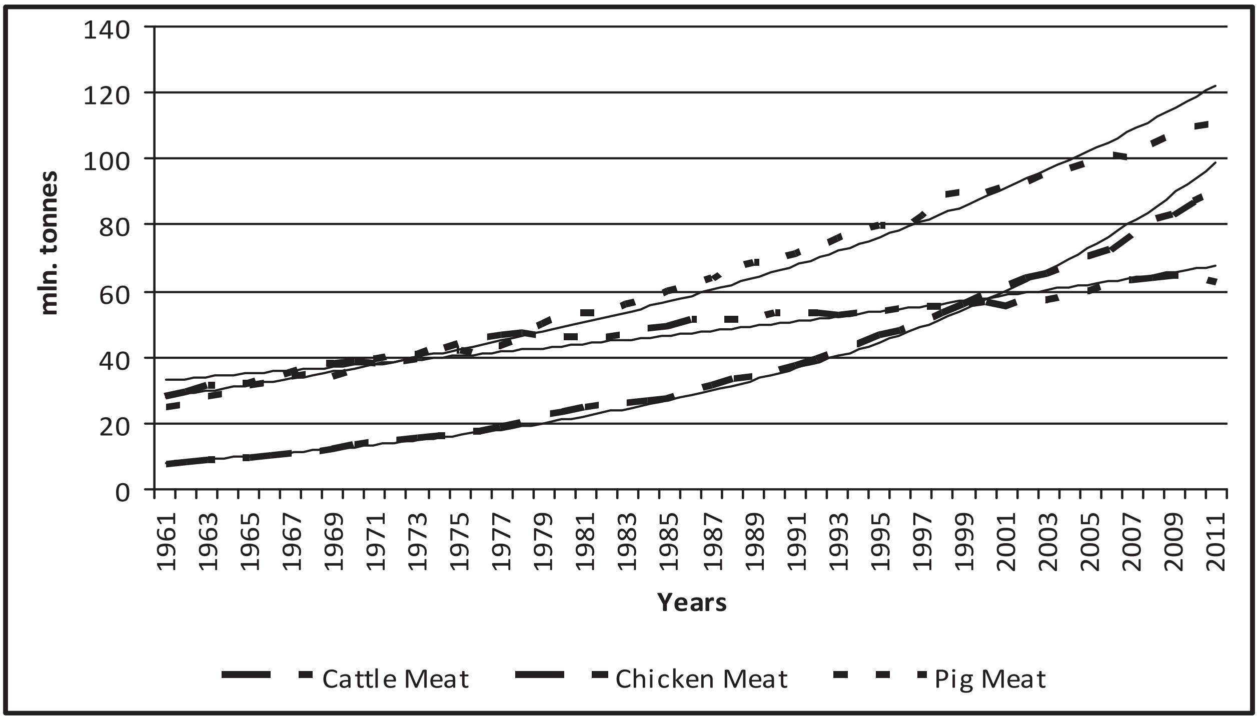

Fig. 2. Production of beef, pork and poultry in the world

The source: [12].

Consider the interaction between production and consumption in Ukraine with the world meat market. First, attention is drawn to the extreme variability of exports and imports volume (production and consumption have not such variability). Until 2008, Ukraine exported the largest amount of beef, the chicken and pork volumes from 1992 to 2010 years were approximately the same extremely low (less than 20 thousand tons). As of 2010 most of Ukraine meat imports was pork. Import of poultry since 2008 has fallen sharply (possible for import substitution), and beef import during the period remained at an extremely low level (fig. 3; 4). Despite the fact that beef production is falling, Ukraine imports these products – less than it exports (takes out an expensive and high-quality beef, and import less quality according population demand fituers).

In total volume of foreign trade of meat products in Ukraine (according to official statistics FAOStat) is a very small proportion of domestic production and consumption (no more than 7%).

Apparently, a significant variation of the volume of exports and imports is associated with a significant corruption of Ukraine customs service Institute. Therefore, considerable unknown produced meat proportion in Ukraine market exists which is not recorded as imports (black and gray imports). Feature of the modern domestic market of animal products is a possibility of supply and demand imbalance, the low level of domestic consumption, and lack of infrastructure.

In recent years, the livestock sector is almost no major structural changes occurred due to the lack of large investment projects. Thus, there is an urgent need to clearly define the priorities for the development of livestock sector and its mechanisms of state support according WTO requirements.

The domestic and global market price ratio

An important question for each of the economies is to establish correlation prices of domestic and world market for any type of meat products. If the concept of internal prices for this type of product exists and is available, for example, according to FAOStat, such world market prices do not exist. Therefore, as the world market price for this type of product, we use the weighted average of export prices of such products. As a weights we us a part of export in world trade volume. The weighted average price (1) and the price dispertion (2) for beef, poultry and pork were calculated by using FAOStat information:

$$\overline{P_i}(t) = \frac{\sum_{j=1}^{20} P_{ij}(t) \cdot V_{ij}(t)}{\sum_{j=1}^{20} V_{ij}(t)} \qquad (1)$$

$$\sigma^2(t) = \frac{\sum_{j=1}^{20} P_{ij}^2(t) \cdot V_{ij}(t)}{\sum_{j=1}^{20} V_{ij}(t)} - \overline{P_i}^2(t), \qquad (2)$$

where i – the index meat position exported by j-th country;

$P_{ij}(t)$ – the unit price ($/t) of the i-export heading country j-th (j = 1,2, ... 20) for the period t;

$V_{ij}(t)$ – the volume of exports (ths t) i-meat position exported by j-th country.

Analyzing the weighted average export prices of meats market, we see the following situation. The most expensive meat in world market is the beef, and the cheapest is the chicken. Moreover, the international prices of each of the three positions of meat behave uniquely. Beef prices grew up the entire range of research (1992-2010) from $2500 to $4100 per 1 tone, chicken prices rose very slightly – from $1400 to $1500 per 1 ton, and pork fell from $ 2700 to $ 2500 per 1 ton. Make a comparison of the domestic and global markets for individual commodities. Beef world prices regularly exceed domestic prices (Fig. 3).Average excess in the time interval from 1996 to 2010 is $1900, and its average deviation is $310.

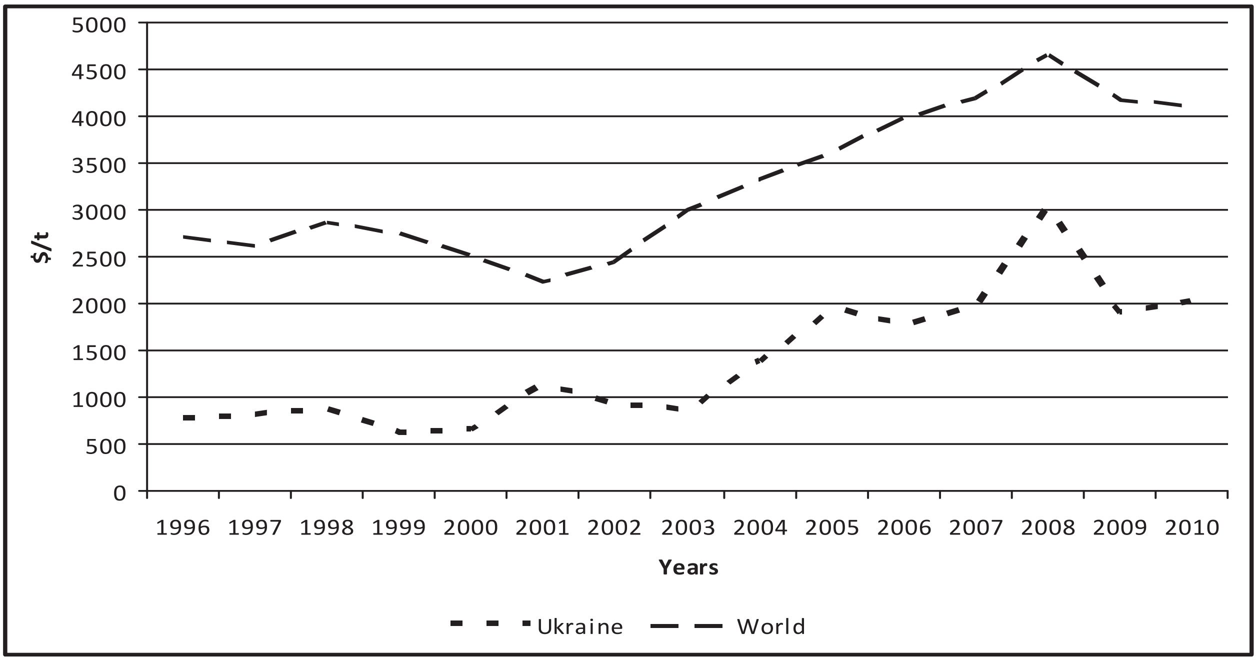

Fig. 3. Compare of beef world prices and Ukraine's prices

The source: [12].

Significantly different situation is observed for pork. If in 1997 there was a difference in $1 for 1 kg, that amounted near 80% of the price of the domestic market, in 2010 there was even a slight excess of the domestic prices relative the world (Fig. 4). All these confirms the factor of increasing consumer demand for pork in Ukraine, that led to an increase in production (supply on the domestic market). The growth of demand outstripped supply several, which determined the increase in domestic prices. In future, the price factor cannot be actively used to increase the supply. It is therefore possible that further consumption growth will be driven by growth of imports, provided no introduction of prohibitive duties.

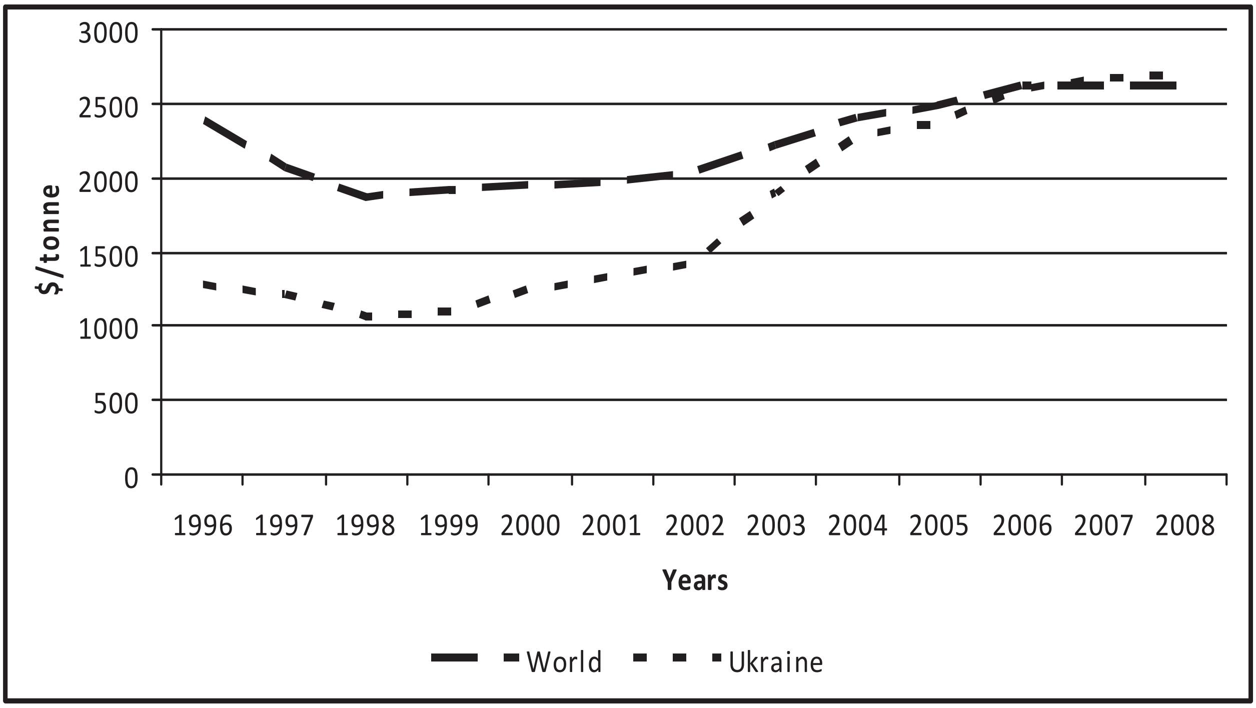

Fig. 4. Compare of pork world prices and Ukraine's prices (three point smoothedp)

The source: [12].

The effect of the introduction of customs duties graphically presented in fig. 5. Throughout the time period from 1997 to 2008, the price level of the domestic market of chicken meat is higher than the world, and recently even a tendency exists to an increase the difference. The reason is the presence of almost prohibitive tariff on the import of poultry (table 1).

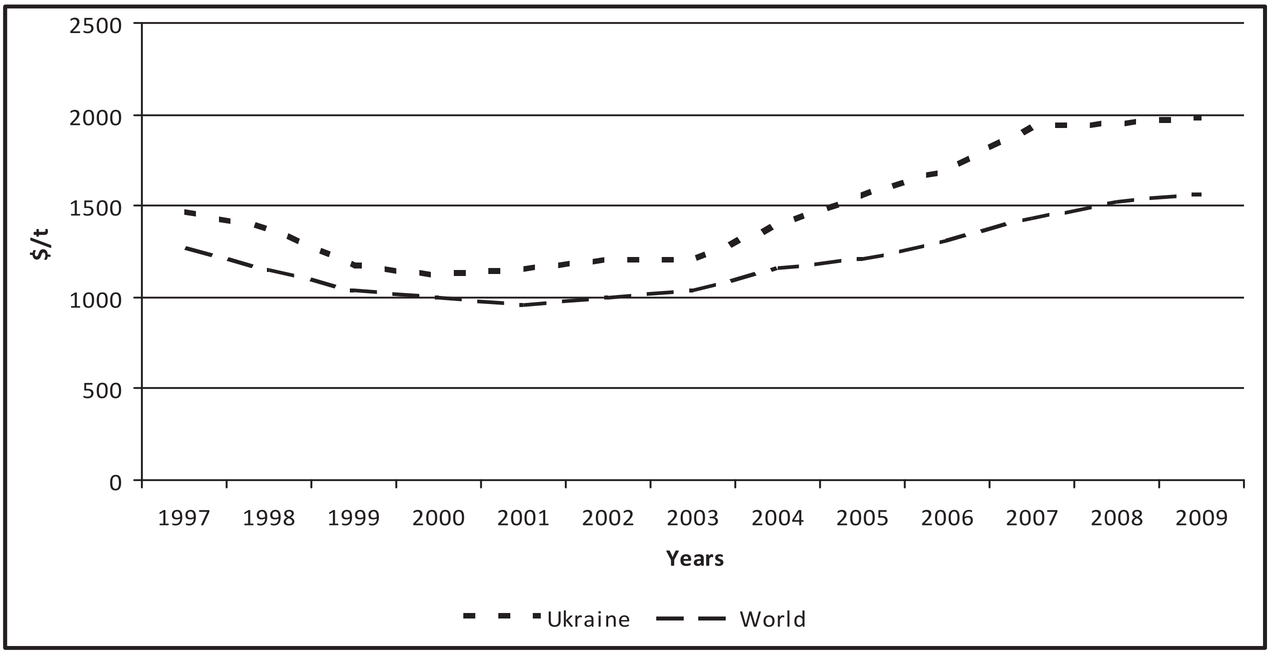

Fig. 5. Compare of poultry world prices and Ukraine's prices (three point smoothedp)

The source: [12].

Tariff regulation of the internal meat market

If we analyze the full range of tariffs (table) for imported meat products and consider them with three positions: to protect domestic producers, budget fulfillment, and from the standpoint of meat products consumers, which is often forgotten. Budget component can be completely ignored, due to the low level of import, then the question should be considered only from two points – consumer and the producer. The almost complete chicken with 30% higher the world prices dominance on the Ukraine meat market speaks of miscalculations that strategy. Common method of protecting domestic production is the use of prohibitive tariffs only limited time period. For chicken, where production has already reached a level sufficient for domestic consumption, rates have already fulfilled their role, and their removal can get a positive impact both on the growth of the competitive ability of the industry and the consumer goods significant spending reduction.

Ukraine meat market tariff protection

Type of meat production	Full rate, € for 1 kg	Preferential rate € for 1 kg	Type of duty
Beef	2,0 €	1,0 €	compensatory
Pork	2,0 €	1,0 €	compensatory
Poultry	60%, but not less than 3€	30%, but not less than 1,5 €	prohibitive

The source: [8].

As for tariffs on beef they are in the range of 20 to 40% of the cost of production in the domestic market. As the price of pork, it is much lower, than the tariffs for pork are more prohibitive than compensatory. Therefore the increase of demand met not fully by the growth of domestic production, and partly due to an increase in prices. High tariffs on imports of chicken meat had a double effect: the positive – significantly increased production in the country, and the negative – both wholesale and retail prices are higher than world figures.

In the last 5 years in Ukraine has formed a stable negative trade balance. We import natural gas, oil, machinery, cars, electronics, clothes, shoes. At the same time, demand for traditional Ukrainian exports dropped significantly (the production of metallurgical and chemical industries) due to increased competition in the global market. In this situation, agricultural sector, that has a positive balance of foreign trade, role is increasing, However, this balance is achieved through the export of cereals and their products and further increase their production can lead to a deterioration of the social and environmental situation in the agricultural sector.

Conclusions. It was analyzed the main tendencies of global meat market in two factors production and prices. It was showed the global world tendency – the fast growing poultry production, which volume in nearest years exceeded beef and pork.

Introduction of the concept of the global meat market prices for certain commodity positions give the possibility to analyze world market tendency influence on the prices dynamics of the domestic meat market.

As a result, we can make the following conclusions on possible options to improve the efficiency of meat production. For two positions pork and poultry the use of tariff regulation leverage may be regarded as successfully performed their functions. Prohibitive tariffs on chicken meat may be canceled, as the industry produces enough products for domestic, so the full market opening will benefit both consumers and manufacturers. The growth of pork production due to the increase in effective demand has stimulated the production increase in and can improve meat diet Ukrainians and stop prevailing chicken growth. Further growth in domestic pork prices would limit the social segment that will be able to consume pork products.

The beef production and consumption remains at a very low level, world and domestic prices differences remained largely stable ($2/kg). As a result, the chosen method of domestic beef market protection cannot be called successful. First of all it is necessary to stimulate consumer demand and all customs tariffs should be abolished. Cheap beef access to the domestic market replaces the consumer liking and positive impact on domestic production growth.

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Новини АПК

В Україні проведено 13266 продовольчих ярмарків

В усіх областях України активізовано проведення сільськогосподарських ярмарків. Адже продовольчі ярмарки – ефективний механізм утримання цінової ситуації на продукти харчування і можливість придбати продукцію у виробника. Так, з початку 2014 року проведено 13266 продовольчих ярмарків за участю сільськогосподарських товаровиробників та обслуговуючих кооперативів на яких реалізовано 151,6 тис. т сільськогосподарської продукції на 1437,7 млн грн.

Мінагрополітики всебічно популяризує проведення ярмаркових заходів і намагається залучити до них якомога більше аграріїв. З початку року найбільшу кількість ярмаркових заходів проведено в Київській, Волинській, Харківській, Запорізькій, Сумській, Херсонській, Полтавській та Черкаській областях. За обсягами реалізованої продукції лідирують Одеська, Харківська, Сумська, Луганська, Київська та Дніпропетровська області.

Лише у лютому в регіонах проведено 6010 продовольчих ярмарків з яких 3928 виїзних. При цьому реалізовано 70,3 тис. т сільськогосподарської продукції на суму 720,1 млн грн.

Слід зазначити, що в місті Києві проведено 196 сільськогосподарських ярмарок, де реалізовано 19,4 тис. т різної продовольчої продукції на суму майже 317,7 млн грн. На ярмарках представлені м’ясна, молочна, овочева продукція, борошно та крупи, продукція бджільництва та хлібобулочні вироби.

Прес-служба Мінагрополітики України