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Subsidies – food security or market distortion

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Abstract

Support, directed to food producers is aiming at long-term stability in food system. Governments offer many programs supporting farmers. Such as price support, export aid, insurance, disaster aid and etc. However, subsidies are controversial tool for sustaining food security, because of their multidimensional effects. Furthermore, subsidies are sources of inequality not only among farmers nationwide, but also among farmers globally. Inability of developing countries to support their food production provoke inequality among global market participants. Millions of food producers around the world are exposed at price risk, and inability of local government to protect them. Main player on global food market support different level of protectionist policies. Such policies are not the matter of food security, but rather the matter of competitiveness on global market.

Key words: Farm Subsidies, Commodity Trade, Food security, Trade Policy

JEL: H25, Q18, Q27

1. Introduction

Subsidizing food production is widely used tool to achieve food security as declared. Developed countries are widely using protectionist policies not only in agro industry, but also in others. On the one hand, supporting food production seems to be logical, on the other hand, using nonmarket methods to influence food markets have several means: from distorting the competition, poverty, provoking inequality to environmental issues. Subsidy policies very often are used to overcome certain issues. Very often subsidies are used to support uncompetitive industries from national economy. Also subsidies are used to support an infant industry or to influence market participants and therefore to adjust their market behavior. Trade disputes, concerning subsidies are tough because this is a question of national security. The US department of agriculture (USDA) spends more than USD 26 billion annually on support for farm industry. Nearly 1 million farmers from the US receive subsidies, but the payments are focused on large producers. In the EU Common agriculture policy (CAP) is well known toolset

for agriculture industry support. Annually CAP costs to European taxpayers more than EUR 50 billion. Industrial agriculture affects the environment via soil quality change, surface and groundwater pollution, wildlife and ecosystems changes and etc.

2. Basic factors justifying subsidies

Governments introduce subsidies because they consider there are valid reasons to do that. We can find subsidies or in particular some export support policies based on external or internal political factors. Social factor and support of local producers is an important issue for the countries using subsidies. On the one hand constantly intensifying competition is forcing governments to extend their support. On the other hand, we are witnessing growing population, unprecedented urbanization, withdraw of economic active population from urban areas and so subsidizing policies seem to be adequate. Policymakers must balance interests of wide spectrum of social groups. Subsidies may help an industry to become self-sufficient, a company to overcome some temporary difficulties, but over time subsidies serve the interests of a small well-off group. Subsidies could be used to change market participant's behavior, for example to use environmentally friendly technologies. Milazzo (1998) argues that market based tools could be more successful than subsidies.

There are several arguments supporting subsidies usage. We may use subsidies in order to support production during military conflicts, natural disasters, affecting food security and food system as a whole. National governments tend to insure agricultural sector as an important element of national security. Subsidies could be used for one of the several reasons:

- Subsidies can be applied to an industry in initial stage of growth. At that moment local market is dominated by foreign companies. Lack of capital is crucial for any infant industry. After the industry reaches the point of self-sufficiency the subsidies should be removed. Of course here we have several arguments against that point of view: once an industry comes to be dependent on subsidies it would fail to gain self-sufficiency.
- Subsidies can be used in support of industry, concerning national security or large part of society. Any government could support particular industry, to restrict bankruptcy using financial support mechanisms. Here subsidies could be used because there may be serious financial implications for the economy. In this case financial institutions may withhold their support, because of uncertainty created.

- Subsidies are powerful tool to affect market participant's behavior. Subsidies are used to affect companies' behavior toward environmental friendly solutions in the business. Analysis of the environmental impact of agricultural subsidies is very complex. Countries in tropics are providing subsidies to clean the tropical forest in order land to be used for agriculture. Furthermore, subsidized irrigation in the regions with water scarcity encourage over-use of scarce water. However, Lingard (1998) argues that there are subsidies promoting environmentally benign, but it is extremely complex to tell apart both types. Water for irrigation in the US is being sold to farmers for only a fraction of market price because of subsidies. Norman Myers (2001r. c. 136) argues that in 90s in Washington state daily expenditure for water was USD 13 million. This provoked water shortage in neighboring states. Backer (2001) argues that today only 36% agriculture output is subsidized, and this is predominantly crops production. Decoupled payments in the EU are supposed to interfere less with farmer's decisions what and how much to produce, but these payments are coupled with acreage. This way less productive land is involved into production process. Subsidies act as a promoting mechanisms farmers to produce commodities which are less economical because of less favorable natural conditions. As a result, subsidies promote intensification of production in countries that do not have necessary natural conditions and the use of fertilizers is a must condition. Overuse of fertilizers and pesticides is polluting soil, water for a long period of time. Without subsidies farmers would be more innovative in order to be competitive on the market. Plowing soil eliminates upper layers and the soil is exposed to erosion.

3. Subsidizing polices in the USA

US department of agriculture (USDA) is spending more than USD 25 billion per year on subsidies. Back in 1933 president Franklin Roosevelt signed the Agricultural Adjustment Act (AAA). Some regard it as the salvation of the market system, others view it as a disastrous legacy of misguided intervention in economic activity. However, the United states have long tradition in supporting agriculture. Currently the US is running the most developed system of agriculture support. There are various programs of assistance, providing protection from the wide range of risks consuming large amount of public wealth.

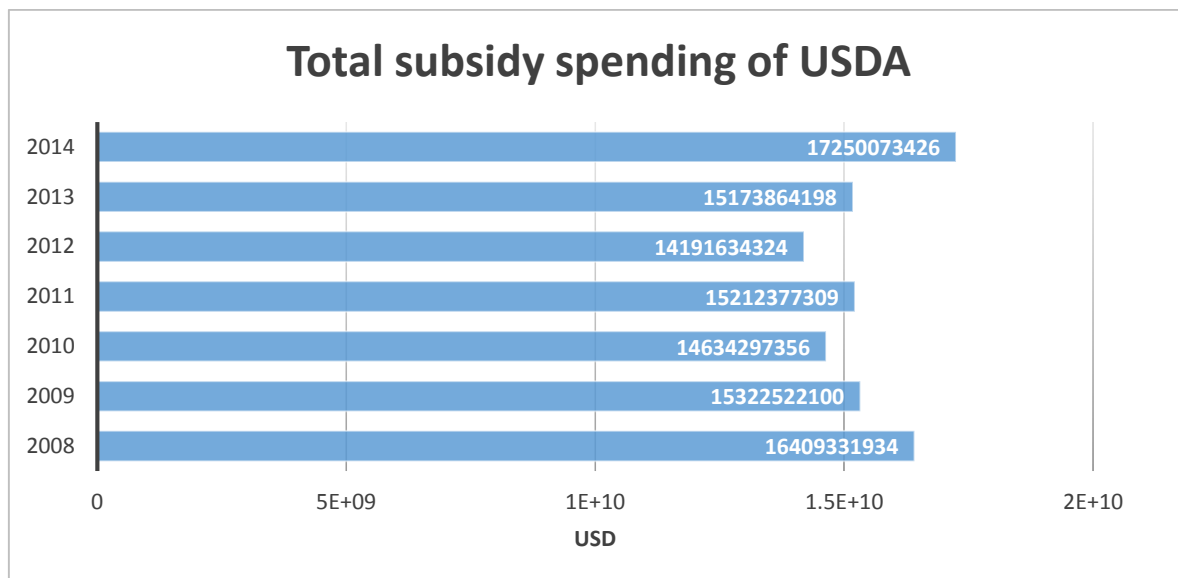


Figure 1 Total subsidy spending of USDA 2008-2014 Source: EWG farm subsidy database statistics

There are eight types of financial assistance: direct payments, marketing loans, counter-cyclical payments, conservation subsidies, insurance, disaster aid, export subsidies, and research directed payments:

Direct payments - are funds paid directly to manufacturers of 10 types of crops: wheat, corn, sorghum, barley, oats, cotton, rice, soybeans, minor oilseeds, and peanuts. Direct payments have been established in 1996, its purpose was to replace old price guarantee programs. Direct payment program is still running. Direct payments program is decoupled from production.

Marketing loans program is again price-support program. This program has been part of subsidy system since the New deal. This program is supporting overproduction by setting minimum prices for crop prices. The program is controversial because it is supporting the same crops as direct payments program.

Countercyclical payments – this program again covers ten commodities as direct payments program. Countercyclical payments provide larger subsidies when market prices are lower. There is a difference with marketing loan program, countercyclical payments are tied to historical production, here the difference with marketing loan subsidies is the latter are tied to current production.

Conservation subsidies – this program dispense more than USD 3 billion per year. Conservation Reserve Program, which was created in 1985 to idle millions of acres of farmland.

Here farmers are paid not to grow any crops, but to cultivate other plants. The USDA is running a wide range of such subsidy programs.

Insurance – there is an agency under the USDA – Risk Management Agency, which is running farm insurance programs. There are two programs available to farmers – yield and revenue insurance. The RMA announce its mission as helping farmers “manage their business risks through effective, market-based risk management solutions.” The RMA has annual spending of about \$4 billion. The activities of RMA are not “market-based.” There are only 16 private insurance companies, which insurance policies are sold to the farmers. The government only cover their administrative costs and insurance risks.

Disaster Aid – disaster aid program and insurance programs are running in parallel. The Congress several times expanded insurance programs in order to reduce farmer’s dependence on emergency bailouts. If Congress declare an event a “disaster” the farmers are often paid twice by the government as a disaster assistance, and with subsidized insurance again payed by the government.

Export Subsidies – the USDA is providing aid to farmers and food companies to support their foreign activities such as advertising campaigns. The Market Access Program dispense more than \$200 million annually. The group of recipients is wide and includes even the Distilled Spirits Council, the Pet Food Institute, the Association of Brewers, the Popcorn Board, and the Wine Institute. Another program ran by USDA us the Foreign Market Development program, which pay more than \$35 million annually to recipients such as the American Peanut Council.

Agricultural Research and Statistics – the National Agricultural Statistics Service conducts hundreds of surveys yearly and prepare reports for every aspect concerning US agriculture. Most American industries are running their own programs and are covering the costs, but the research and statistics service for the agriculture industry is an exclusion. The USDA vast amount of money for informational support for farmers about \$3 billion annually.

In spite of developed system of measures there are some distortion effects. Distribution system of payments to farmers generate inequality, only 10% of producers receive an average of USD 32,043 per year for the period 1995-2014. According to the USDA statistics for the same period 80% of recipients receive USD 604 per year. Payments are made yearly to prevent loses in agricultural sector. Furthermore, for the period 1995 – 2014 USD 183,7 billion or 56.9% of total costs were spent on Commodity programs, Crop insurance subsidies have share of 21% or

USD 67,6 billion, Conservation programs have share of 13.1% or USD 42.5 billion and Disaster programs have share of 9% or USD 29 billion.

Table 1 Commodity subsidies in the United States from 1995-2014. Source: EWG statistics

% of recipients	% of payments	Number of recipients	Payment per recipient
Top 1%	26%	29,968	\$1,576,901
Top 2%	38%	59,936	\$1,157,547
Top 3%	47%	89,904	\$953,381
Top 4%	54%	119,872	\$822,241
Top 5%	59%	149,841	\$727,634
Top 6%	64%	179,809	\$654,776
Top 7%	68%	209,777	\$596,240
Top 8%	71%	239,745	\$547,785
Top 9%	74%	269,714	\$506,847
Top 10%	77%	299,682	\$471,717
Top 11%	79%	329,650	\$441,170
Top 12%	81%	359,618	\$414,327
Top 13%	83%	389,587	\$390,526
Top 14%	84%	419,555	\$369,266
Top 15%	86%	449,523	\$350,160
Top 16%	87%	479,491	\$332,895
Top 17%	88%	509,460	\$317,212
Top 18%	89%	539,428	\$302,905
Top 19%	90%	569,396	\$289,798
Top 20%	91%	599,364	\$277,750
Remaining 80% of recips.	9%	2,397,460	\$7,183

There are a lot of reasons to blame policies of subsidizing agriculture. Maybe the most important is that there is unequal treatment of farmers – the bigger receive more. Therefore, we observe withdrawal of economic active population from agriculture industry and consolidation in farming sector. 80% of subsidies goes to 9% for large farmers. Agriculture is an example for large government spending, vast inequality and there isn't such industry, which is consuming such amounts of taxpayers money. Farm subsidies damage the economy and distort the market because here supply and demand rules don't work. In other industries profit levels signals to investors for market opportunities, entrepreneurs innovate in order to offer better product or service, lowering the prices means less investments and cost reduction, but this is not the case in agriculture industry.

4. Subsidies in the EU

Common agricultural policy (CAP) of the EU is main toolset, used to support agriculture industry within the EU. CAP has always been adapted to the constantly changing environment. CAP is the most expensive program in the EU with annual budget more than 50 billion euro or approximately 45% of the EU budget. During negotiations on creation of Common market, France insisted on creation of agricultural subsidies system. First CAP started its operations in 1962 buying farm output when market price fell below certain level. From 1970s the EU started to tax agricultural imports and started subsidizing its exports. Such policies made EU agricultural production expensive, and also they damaged foreign farmers. The EU agriculture market is becoming more and more insulated. Today CAP is complex program with two pillar structure. Using first pillar farmers are receiving direct payments, and in the past several years decoupled direct payments. Thus should be less interference with farmer's decisions about production quantity. Second pillar is dedicated to rural development support.

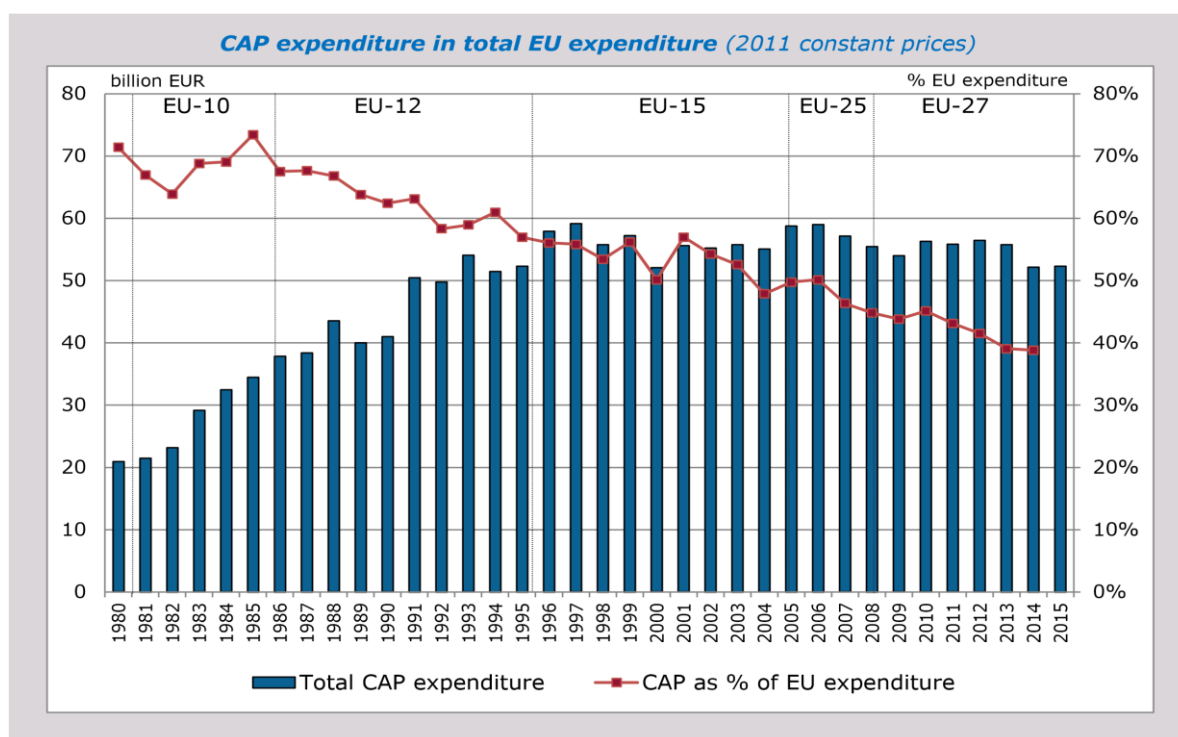


Figure 2 CAP expenditure in total EU expenditure Sources: CAP expenditure: European Commission, DG Agriculture and Rural Development (Financial Report). EU expenditure: European Commission, DG BUDG-2008 EU Budget Financial Report for 1980 - 1999, DG BUDG – 2015 EU Budget Financial Report from 2000. Annual expenditure in 2011 constant prices.

Despite of CAP and common market there are inequalities in subsidies received by farmers from different member states and even between farmers from single member state. Largest shares of direct payments are going to France, Spain, Germany, UK and Italy. Here again largest stake from subsidies are going to largest farmers and small farms are disappearing from EU agriculture industry. Direct payments from the first pillar are concentrated in aid to several crops. There is an increment of expenses in support of agriculture industry in the EU. For the period 2000 – 2007 as farmer's support are spent approximately 330 billion euro, which is 44% of the EU budget. For the period 2007 – 2013 spending are 371 billion euro, but for the period 2014-2020 speeding will be only 435,6 billion euro.

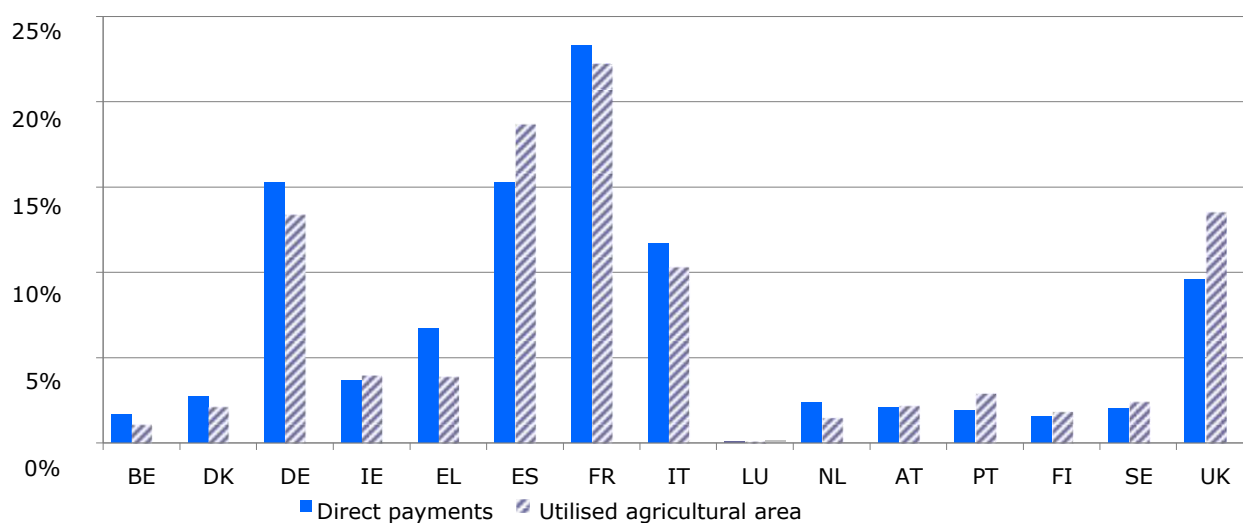


Figure 3 Distribution of direct payments (2014 financial year), utilized agricultural area (2013 Farm Structure Survey) between the EU-N13 countries (EU-N13=100%) Source: European Commission, Report on the distribution of direct aid to farmers, financial year 2014

Today 80% of payments are directed to less than 20% of beneficiaries. In Bulgaria even smaller part of beneficiaries receive 80% of subsidies. Top 10 crops farmers, all controlled by a single owner, in 2012 received 62% of subsidies.

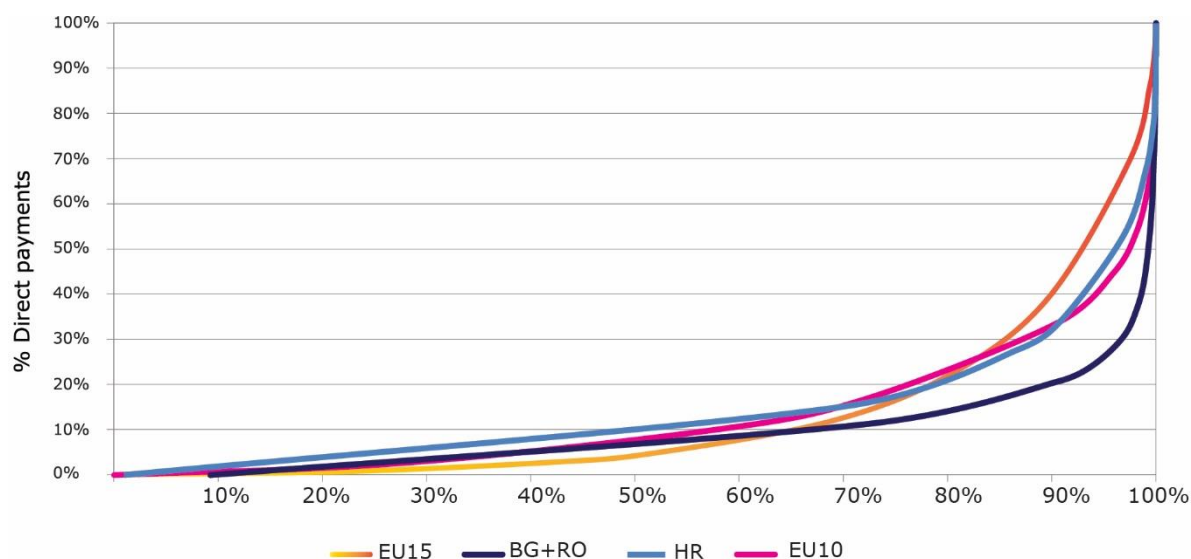


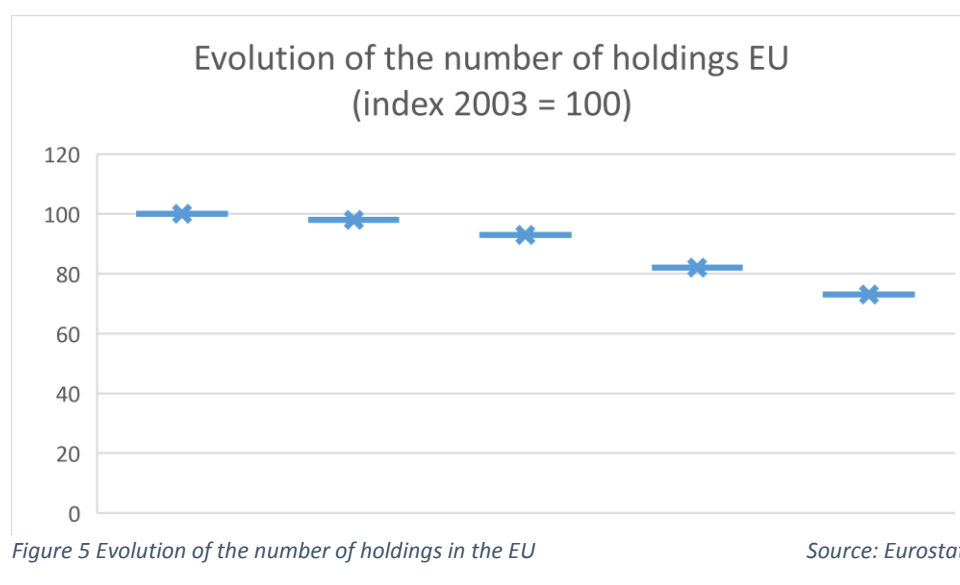
Figure 4 Distribution of direct payments between beneficiaries in the EU in financial year 2014 Source: European Commission, Report on the distribution of direct aid to farmers, financial year 2014

In the EU direct payments are not equally distributed among farmers. On average, 80% of beneficiaries get 20% of payments. Even in Bulgaria and Romania 88% of beneficiaries receive 20% of payments. It is obvious that some subsidies are paid improperly, because some farmers adapt their business structure in a way to receive more subsidies. Millions of euros every year are paid to farmers who would not normally planted the areas included in their claims for direct payments. from 2007 to 2014 the total number of beneficiaries decreased, the exception was in Bulgaria, Romania and Croatia. This reduction of total number of beneficiaries has resulted in smaller share beneficiaries receiving lower amounts of direct payments thus in a higher average amount per beneficiary. But this is still not explanation about inequality of distribution of direct payments. Some recent developments in distributions of direct payments are consequence of changes in the farms. Smaller farms are disappearing, economic active population is leaving the rural areas and consolidation may be more likely the explanation of the case.

5. Subsidies' market distortion effects

In many cases subsidies reach their goals, but very often they are factor, introducing inequality. Subsidies cause imbalances in supply and demand, market fragmentation and distort price finding market mechanism. If price discovery mechanism is distorted to certain degree, the market participants would not be able to recognize the true cost of the output. Through subsidies there is redistribution of public wealth, directed to small group well-off farm businesses. If an

industry is subsidized, supply and demand imbalances occur. We have artificially very high or very low prices, stocks, and incoherent investment decisions. Despite of large amount of subsidies in the EU, there is still withdraw of economic active population from agro industry. Only between 2003 and 2013 more than 4 million farms left the sector. The reality is that subsidies don't promote sustainable development of agricultural industry in the EU, they promote bad businesses. Subsidies in any form will grow and the bureaucracy will continue to pick good and bad businesses. The new sustainable businesses are very seldom result of strict government policy.



Price discovery function of markets is also important and produces stimulus for market participants to be more innovative and cost-effective. If market distortions removed, the new technologies would be introduced on the markets. Without subsidies would be fast and efficient way to find true market balance, but market participants would experience the true cost of the output. In a competitive marketplace the cost-effective and innovative producers will take advantage. Oversupply is supposed to lead to limitation of production, but subsidies blame that action.

Very often countries with poor food production are receiving food aid. In short-term aid improve food availability and nutrition. Christopher B. Barrett argues that government purchases in developed countries with subsidized production are just lowering internal market tensions. Foreign food aid disincentive local food production to some extent.

Fragmentation of global market was raised mostly by nationalistic and inward-looking policies. Such policies are used by large number of developed countries and are generating risk of reciprocal respond. Subsidies keep ineffective local unsubsidized production and takes away the possibility unsubsidized and more cost-effective producers to compete on global market. Thus, subsidies don't allow efficient resource allocation.

In summary, subsidies could affect markets as:

- boost ineffective resource allocation;
- increasing price volatility;
- create incentives economic active population to leave food production industry;
- overproduction;
- market fragmentation – developing countries are trying to insulate their domestic markets from global market treats;
- subsidies are inducing excessive use of fertilizers and pesticides, which harm the environment.

5. Harm to developing countries

Agriculture has always been the strongest pillar in developing countries' economies, and food security is basic condition for their economic growth. Subsidized agriculture in developed countries is probably the greatest obstacle to export growth from developing countries. Large amounts of subsidies are encouraging overproduction and surplus goods are sold on global market on dumping prices or below production price. In such an environment if producers from LIC are not subsidized, they would be no longer competitive on the global market. We have the example of countries of Sub-Saharan Africa where millions of farmers are striving to survive. Marinov argues that (2013) there are more than 20 economic integrational communities in Africa with their own food trade regulations. Even between neighboring countries food trade is impossible.

Furthermore, farmers from LIC are stressed by the dumping prices and are pushed towards bankruptcy. Subsidy policies are often the base for deterioration of relations with trading partners.

Subsidies are the main reason for overproduction of certain crops in developed countries, causing prices to fall, sometimes below the cost of production in developing countries. American cotton farmers received approximately 75% subsidies than the world market price for this crop. Stieglitz (2006) argues that 25,000 cotton farmers received a \$230 subsidy for every acre of cotton planted - a total of \$3.9 billion. Subsidies make impossible for more than 10 million people, depending directly on cotton production to compete on the global market because of subsidies. Probably millions people are indirectly affected because cotton revenues are a major source of foreign exchange.

Max Borders and H. Sterling Burnett (2006) argue that West Africa's Burkina Faso lost 12 % of its export due to competition from subsidized U.S. cotton. In Burkina Faso, 85 percent of the population (more than two million people) depends on cotton production. Furthermore, half of the population in the country lives in poverty. The production cost for cotton are three times lower than in the United States, but farmers from Burkina Faso are not able to compete in world markets against subsidized American cotton producers. There are similar problems in other Sub-Saharan countries that also rely heavily on cotton production.

There is also indirect impact of farm subsidies on poor countries. As local producers are not able to compete successfully on the global market, the issue of poverty appears. Poverty is principal cause for hunger and health distortions. Undernourishment and health are directly related to incomes. It is clear that many nourishment, health and environmental problems could be solved with development in agricultural sector in developing countries.

Conclusion

Subsidies are controversial tool, aimed at food security and food system development, but in developed countries. Subsidies also hold back progress in developing countries and result in severe environmental damage. Changing in subsidies policies would benefit every nation budget, third-world farmers and the environment. The dual nature of subsidies suggests support for agriculture in order to gain food security of competitiveness globally, but at some extent admit market distortion effects. Here the balance is the most important. Over production in the EU and the USA causes not only price dumping, global market fragmentation, poor resource allocation of national wealth, poverty in developing countries, but also huge inequality. Nowadays we have annual food waste 1,2 – 2 billion tons in developed countries, but at the same time we have more than 700 million people in 48 countries are starving.

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