

PRICE OF GRAIN MAIZE AT THE LEVEL OF THE EUROPEAN UNION (2016-2018)

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ABSTRACT

The paper highlights the evolution of the price of grain corn for members of the European Union. The analysed time interval is 2016-2018, emphasizing the short-term price evolution.

The price is presented and analysed in the context of the specific conditions of cultivation, for the 28 component states of the European Union, starting from the differences related to climatic factors, the degree of development, capitalization and subsidization of agricultural production.

The trading price registered a national multiannual average of 175.22 \$/t, with extreme values of 131.90 \$/t for Croatia (2016) and 251.50 \$/t for Greece (2018 - total variation amplitude of 11.96 \$/t).

INTRODUCTION

The importance and economic advantages of maize production derive from the versatility of its destination or use: fodder, industrial, agro-technical - technological, article for export and source of profit for agricultural units.

Price is the valuation of a good at a given time in the market and is the only economic variable that produces income. All other variables only generate expenses or investments. In this way the price is particularly important for production, given the factor that generates the increase of economic efficiency and its profitability.

The prices of agricultural products, in the systems specific to the market economy, are formed on the basis of the laws of this type of economy, respectively of the law of supply and demand and of the law of competition.

Pricing can be a complex action if the closest competing companies are difficult to identify. But we must not forget that no product is absolutely uncompetitive; there is almost always a way to meet customers' need for the product. Also different consumers have different needs; therefore, they will have different needs regarding what constitutes value in exchange for money. Therefore, markets must be carefully segmented to ensure a fair price for each segment.

Within the competitive market economy, the prices of agricultural and agro-food products have a number of characteristics such as: they show a fluctuation, over time, due to the perishability of products, the degree of storage suitability and the size of specific storage capacities, the degree of rarity (certain situations), their qualities and the degree of demand by consumers; may have a tendency to stabilize or reduce; may increase or decrease the incomes of agricultural producers, depending on the intensity of consumption; their fluctuation can amplify, reduce or stabilize the price of other consumer goods.

Grain maize is a significant crop at Community level and as such we considered, as an interesting fact, the need to present comparative prices for the members of that structure.

METHOD AND MATERIAL

The study was based on the operation with a specific indicator (price - expressed in \$/t), and in addition is presented information about the components of the primary supply: harvested area (ha), total production (t), average production (kg /Ha). Prices are equal to the manufacturer's prices in local currency, which are converted into \$ based on the annual exchange rate (according to IMF data).

As a method of analysis, the method of comparison in time and space was used. In addition to the time sequences included in the analysis, we also operated with their average.

The analysis was performed both at regional level of the European Union and at national level (28 component states), presenting the positioning of each country in relation to the level of the regional average price and the absolute variations of the indicator (\$/t), and finally reference and indicator dynamics. In the case of areas and implicitly of total and average production there are no data for Cyprus, Estonia, Finland, Latvia, Ireland, Malta, Great Britain, Sweden, and in the case of price there are no data for Belgium, Denmark and the Netherlands..

RESULTS AND DISCUSSIONS

It is worth noting, from the beginning, the variety of growing conditions for the 20 states (Austria, Belgium, Bulgaria, Czech Republic, Croatia, Denmark, France, Germany, Greece, Italy, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Hungary), which entails variations in the technology variants applied. As a result, we can discuss the variable suitability of the culture for different areas, as well as the variable importance given to this culture at the level of the 20 countries.

At the general level of the European Union, we are talking about an area of 8,341,538 ha, a total production of 65,771,392.67 t and a level of 7,885 kg/ha for average production (levels presented as average for the period 2016-2018).

In terms of cultivated area, the states of the European Union can be grouped as follows: states that have cultivated up to 100,000 ha (Belgium, Czech Republic, Denmark, Lithuania, Luxembourg, the Netherlands, Portugal, Slovenia); states that have cultivated between 100,000.1 and 1,000,000 ha (Austria, Bulgaria, Croatia, Germany, Greece, Italy, Poland, Slovakia, Spain, Hungary); large cultivating states - over 1,000,000 ha (France and Romania). As such, the decisive weights of France (17.18% - 1,433,489.67 ha) and Romania (29.67% - 2,474,794.67 ha) are noted, as well as the contributions of Hungary (11.77% - 981,456 ha) and Italy (7.58% - 632,558.33 ha) to the achievement of the Community level of the indicator.

In terms of total production, we considered it interesting to differentiate the states as follows: productions up to 100,000 t (Denmark, Lithuania, Luxembourg, the Netherlands); productions between 100,000.1 and 1,000,000 t (Belgium, Czech Republic, Portugal, Slovenia); productions between 1,000,000.1 and 10,000,000 t (Austria, Bulgaria, Croatia, Germany, Greece, Italy, Poland, Slovakia, Spain, Hungary), productions over 10,000,000 t (France 19.77% - 13,014,006.33 t and Romania 22.17% - 14,578,807.67 t).

From the point of view of the average production per productive unit, there are two large groups of states: up to 10,000 kg/ha (Belgium, Bulgaria, Czech Republic, Croatia, Denmark, France, Germany, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovakia, Slovenia, Hungary); over 10,000 kg a (Austria, Greece, Italy, the Netherlands, Spain). Unfortunately, Romania registers the lowest level of average production (5,891 kg/ha) reaching only 74.71% of the Community level of the indicator (7,885 kg/ha), and Spain (11,512 kg/ha) exceeds -the most accentuated- the level Community (+ 46.0%).

Table 1 contains the data related to the specific situation, in terms of grain price of corn - national and regional levels.

At the level of 2016, the average price at regional level was 166.49 \$/t, compared to which there were, at the level of the component countries, both supra-unit values and sub-unit levels. Thus France, Germany, Greece, Italy, Luxembourg, Portugal, Romania and Spain are characterized by supra-unitary levels: 175.90, 168.10, 238.0, 203.60, 196.30, 185.40, 182.30 and 186.70 \$/t respectively. Subunit levels reached: 139.40\$/t for Austria, 157.60\$/t for Bulgaria, 159.60\$/t for the Czech Republic, 131.90\$/t for Croatia, 136.30\$/t for Lithuania, 134.90\$/t for Poland, 141.90\$/t for Slovakia, 144.50 \$/t for Slovenia and 148.0\$/t for Hungary.

Table 1.

The price of corn grains in the European Union (\$/t)

No.	Specification	Year			Average**	
		2016*	2017*	2018*	Effective	% compared to the average
1	Austria	139.40	158.90	167.60	155.30	88.63
2	Bulgaria	157.60	164.30	168.80	163.56	93.35
3	Czech Republic	159.60	161.70	185.00	168.67	96.26
4	Croatia	131.90	154.30	152.20	146.13	83.40
5	France	175.90	160.90	186.60	174.47	99.57
6	Germany	168.10	176.90	194.80	179.93	102.69
7	Greece	238.00	231.50	251.50	240.33	137.16
8	Italy	203.60	213.40	224.00	213.67	121.94
9	Lithuania	136.30	159.50	182.40	159.40	90.97
10	Luxembourg	196.30	180.30	183.00	186.53	106.45
11	Poland	134.90	144.20	171.40	150.17	85.70
12	Portugal	185.40	188.00	204.40	192.60	109.92
13	Romania	182.30	167.80	180.10	176.73	100.86
14	Slovakia	141.90	152.10	169.80	154.60	88.23
15	Slovenia	144.50	159.20	173.40	159.33	90.93
16	Spain	186.70	193.60	208.20	196.17	111.96
17	Hungary	148.00	159.10	170.60	159.23	90.87
18	Regional average level	166.49	172.10	187.06	175.22	100.0

<http://www.fao.org/faostat/fr/#data/PP>(15.02.2021)
own calculations

The year 2017 is characterized by price variation limits from 144.20 \$/t for Poland to 231.50 \$/t in the case of Greece. Consequently, we are talking about states that registered lower levels, compared to the reporting base (regional level of the indicator - 172.10 \$/t) - 167.80 \$/t Romania, 164.30 \$/t Bulgaria, 161.70\$/tCzech Republic, 160.90 \$/tFrance, 159.50 \$/tLithuania, 159.20\$/tSlovenia, 159.10\$/tHungary, 158.90\$/tAustria, 154.30\$/tCroatia, 152.10\$/tSlovakia, and higher levels - 176.90\$/tGermany, 180.30 \$/tLuxembourg, 188.0 \$/tPortugal, 193.60 \$/tSpain, 213.40 \$/tItaly.

If we refer to the specific situation of 2018, there is a regional price of 187.06 \$/t, compared to which the component states were positioned as follows: overruns - Germany 194.80 \$/t, Portugal 204.40 \$/t, Spain 208.20 \$/t, Italy 224.0 \$/t, Greece 251.50 \$/t; decreases - France 186.60 \$/t, Czech Republic 185.0 \$/t, Luxembourg 183.0 \$/t, Lithuania 182.40 \$/t, Romania 180, .9.80 \$/t, Bulgaria 168.80 \$/t, Austria 167.60\$/t, Croatia152.20\$/t.

Starting from the annual situations, previously presented, the average of the period was determined, characterized by a regional level of the indicator of 175.22 \$/t. Compared to this state of affairs, the component states were positioned as follows: subunit levels: 99.57% France - 174.47 \$/t, 96.26% Czech Republic - 168.67 \$/t, 93.35% Bulgaria -

163.56 \$/t, 90.97% Lithuania - 159.40\$/t, 90.93% Slovenia - 159.33\$/t, 90.87% Hungary - 159.23 \$/t, 88.63% Austria - 155.30 \$/t, 88.23% Slovakia - 154.60 \$/t, 85.70% Poland - 150.17\$/t, 83.40 % Croatia - 146.13\$/t (Fig. 1); supra-unitary levels: 100.86% Romania - 176.73\$/t, 102.69% Germany - 179.93\$/t, 106.45% Luxembourg - 186.53\$/t, 109.92% Portugal - 192.60\$/t, 111.96% Spain - 196.17\$/t, 121.94% Italy - 213.67\$/t, 137.16% Greece - 240.33\$/t (Fig. 2).

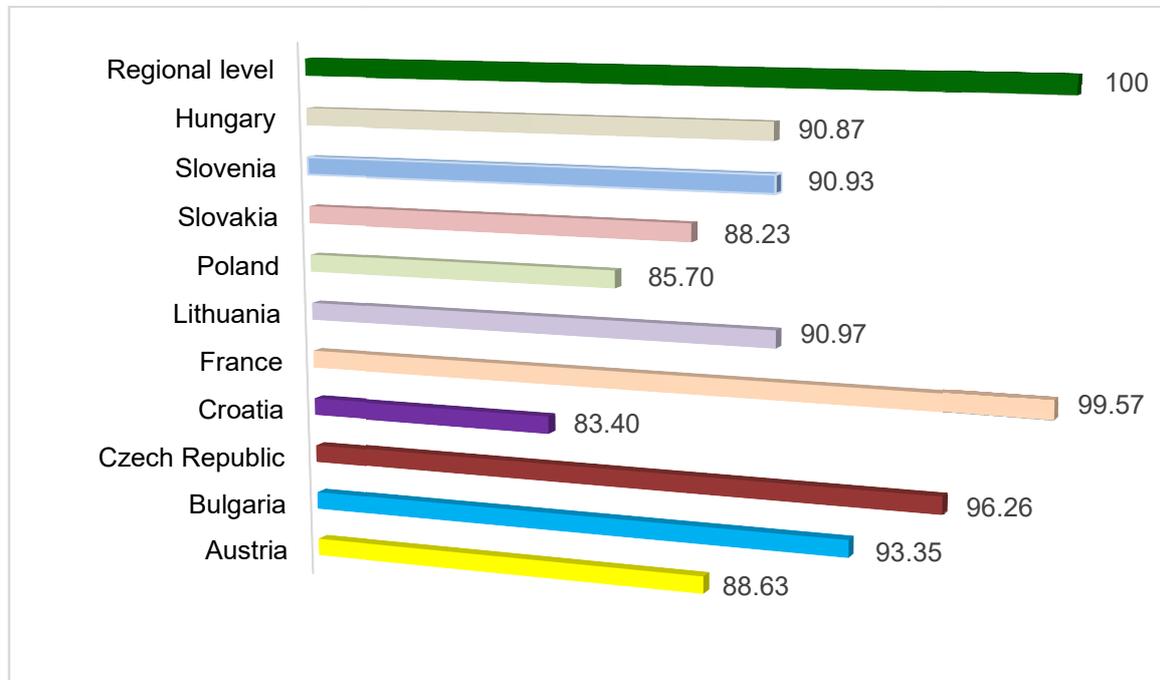


Fig. 1. Positioning of countries with prices below the EU average
(% - processed by: www.fao.org)

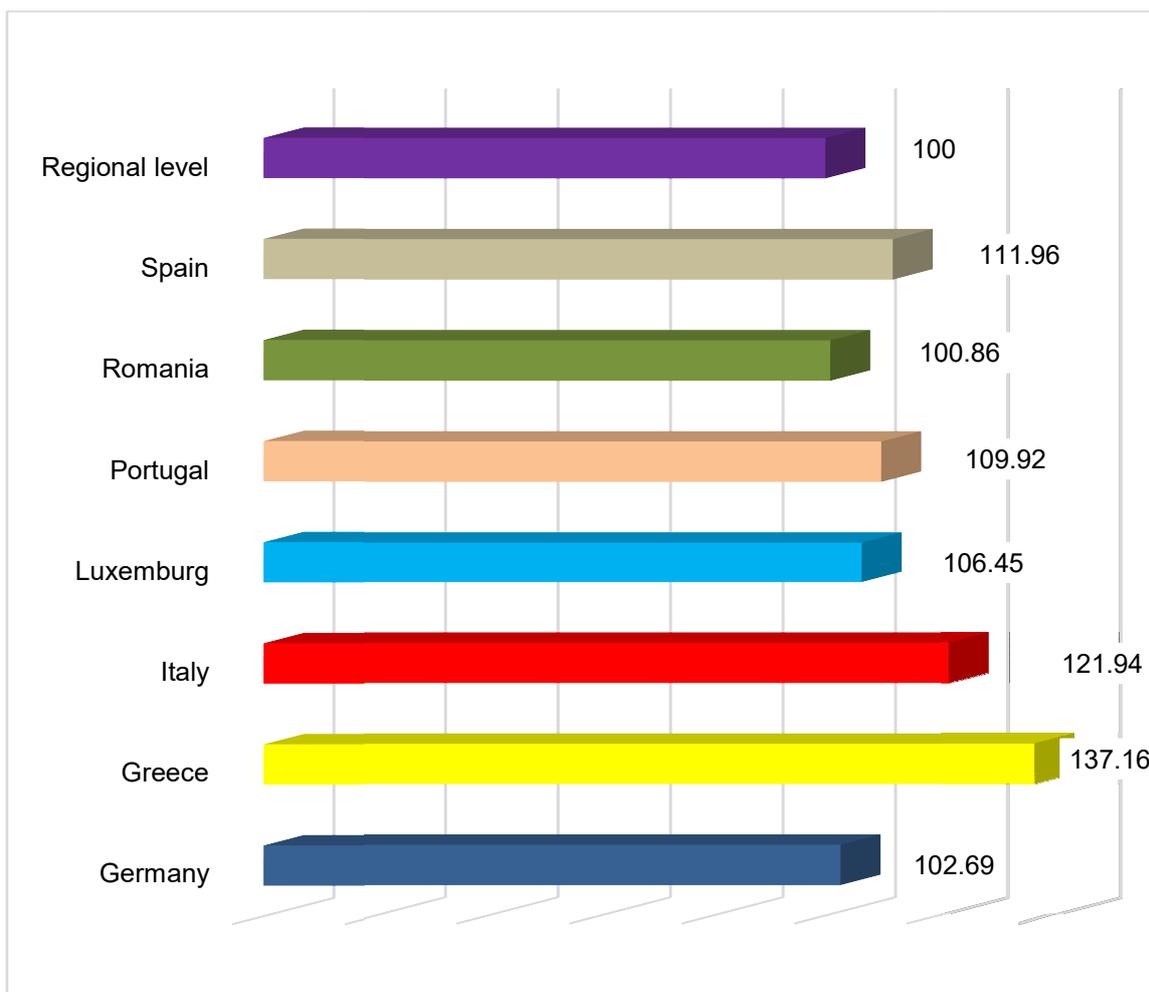


Fig. 2. Positioning of countries with prices above the EU average (% - processed by: www.fao.org)

Data on the absolute change in price (\$/t), at the level of the component states of the European Union and at the level of the region, are included in table 2.

Table 2.

Absolute variation in the price of corn grain (\pm \$/t)*

No.	Specification	$\pm\Delta$ 2017 vs. 2016	$\pm\Delta$ 2018 vs. 2017	$\pm\Delta$ Media vs. 2018
1	Austria	+20.50	+8.70	-12.30
2	Bulgaria	+6.70	+4.50	-5.24
3	Czech Republic	+2.10	+14.30	-16.33
4	Croatia	+22.40	-2.10	-6.07
5	France	-15.00	+25.70	-12.13
6	Germany	+8.70	+17.90	-14.87
7	Greece	-6.50	+20.00	-11.17
8	Italy	+9.80	+10.60	-9.33
9	Lithuania	+23.20	+22.90	-23.00
10	Luxembourg	-16.00	-0.30	+3.53
11	Poland	+9.30	+27.20	-21.23
12	Portugal	+2.60	+16.40	-11.80
13	Romania	-14.50	+12.30	-3.37
14	Slovakia	+10.20	+17.70	-15.20
15	Slovenia	+14.70	+15.20	-14.07
16	Spain	+6.90	+14.60	-12.03
17	Hungary	+11.10	+11.50	-11.37
18	Regional average level	+5.61	+14.96	--11.84

*own calculations

For Austria, there are increases in 2017 and 2018 (+20.50 and +8.70 \$/t), but also decreases for the average period compared to the reporting base (-12.30\$/t).

Bulgaria is characterized by the existence of a situation when the indicator decreases, compared to the reference term - the average of the period (-5.24\$/t) and by two situations of increasing the level of the indicator - the years 2017 and 2018 (+6.70 and +4.50\$/t respectively).

The Czech Republic shows an evolution characterized by absolute decreases for the average of the period (-16.33\$/t), but also by increases of the indicator in the years 2017 and 2018 (+2.10 and +14.30\$/t).

In the case of Croatia, there are two decreasing trends of the level of the indicator in 2018 and for the average of the period (-2.10 and -6.07\$/t respectively) as well as an upward trend in the case of 2017 (+22.40 \$/t).

In the case of France, it is found that the indicator showed two decreasing trends (-15.0 \$/t for 2017 and -12.13 \$/t for the average of the period) and an increasing trend for 2018 (+25.70 \$/t).

Germany is characterized by the existence of two situations when the indicator increases, compared to the reference period - 2017 and 2018 respectively (+8.70 and +17.90 \$/t) and by a situation of decreasing the level of the indicator - the average of the period (-14.87 \$/t).

Greece shows an evolution characterized by absolute decreases in 2017 and for the average of the period (-6.50 and -11.17 \$/t respectively), but also by increases of the indicator in the case of 2018 (+20.0 \$/t).

In the case of Italy, there are two upward trends in the level of the indicator in 2017 and 2018 (+9.80 and +10.60 \$/t, respectively) as well as a downward trend for the average of the period (-9.33 \$/t).

In Lithuania, there is a decrease of \$ 23.0 \$/t for the average of the period compared to the reference term, as well as two increases in 2017 and 2018 (+23.20 and +22.90 \$/t, respectively).

For Luxembourg, there are decreases in 2017 and 2018 compared to the reporting base (-16.0 and -0.30 \$/t), but also an excess of it for the average period (+3.53 \$/t).

Poland is characterized by the existence of two supra-unitary levels for 2017 and 2018 (+9.30 and +27.20 \$/t respectively) and a subunit level for the average of the period (-21.23 \$/t).

In Portugal, there is a decrease of 11.80 \$/t for the average of the period compared to the reference term, as well as two increases in 2017 and 2018 (+2.60 and +16.40 \$/t, respectively).

In the case of Romania, there are two decreasing trends in the level of the indicator for 2017 and for the average of the period (-14.50 and -3.37 \$/t) as well as an upward trend in the case of 2018 (+12.30 \$/t).

Slovakia shows upward trends for 2017 and 2018 (+10.20 and +17.70 \$/t respectively), as well as a decreasing trend for the average for the period (-15.20 \$/t).

For Slovenia, there is a decrease, compared to the reporting base, for the average of the period (-14.07 \$/t), but also two exceedances of it at the level of 2017 and 2018 (+14.70 and +15.20 \$/t respectively).

At the level of Spain, there are two increases with 6.90 and 14.60 \$/t in 2017 and 2018, respectively (compared to the reference term), but also a decrease for the average of the period (-12.03 \$/t).

In the case of Hungary, it is found that the indicator showed a decreasing trend for the average of the period (-11.37 \$/t) and two increasing trends for 2017 and 2018 (+11.10 and +11.50 \$/t respectively).

At regional level, there is a fluctuation of the price, the negative differences characterizing the average of the period (-11.84 \$/t), and in the case of 2017 and 2018 there are increasing levels of the indicator compared to the reference term (+5.61 and +14.96 \$/t respectively - Fig. 3).

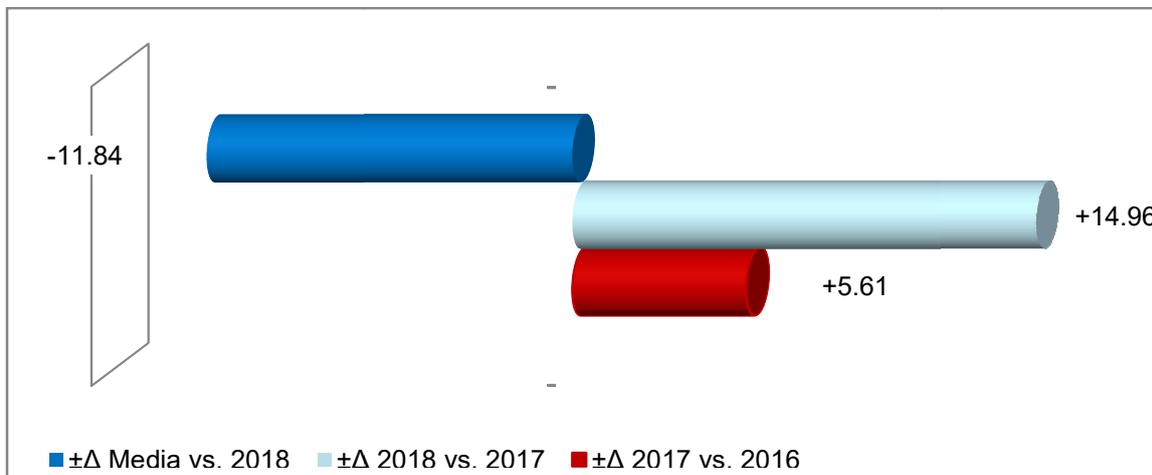


Fig. 3. Absolute variation of the average price at regional level (\$/t)

Regarding the annual amplitudes of variation of the indicator, they were 106.10 \$/t in 2016, 79.40 \$/t in 2017, 99.30 \$/t for 2018 and 94.20 \$/t for the average of the period (Fig. 4).

If we analyse the indicator in terms of the amplitude of variation for each reference level (national and regional), we find the following (Fig. 5): variations of \$ 28.20\$/t in Austria; changes of 11.20 \$/t in the case of Bulgaria; 25.40 \$/t for the Czech Republic; variations of 22.40\$/t in Croatia; changes of 25.70\$/t in France; amplitude of 26.70 \$/t in Germany; changes of 20.0 \$/t in the case of Greece; amplitude of variation of 20.40 \$/t in the case of Italy; changes of 46.10 \$/t for Lithuania; 16.0\$/t for Luxembourg; changes of 36.50\$/t in the case of Poland; 19.0\$/t for Portugal; amplitude of variation of 14.50 \$/t in the case of Romania; changes of 27.90\$/t in Slovakia; 28.90\$/t Slovenia; total amplitude of 21.50 \$/t for Spain; changes of 22.60\$/t in Hungary; variations of 20.57 \$/t at the level of the European Union.

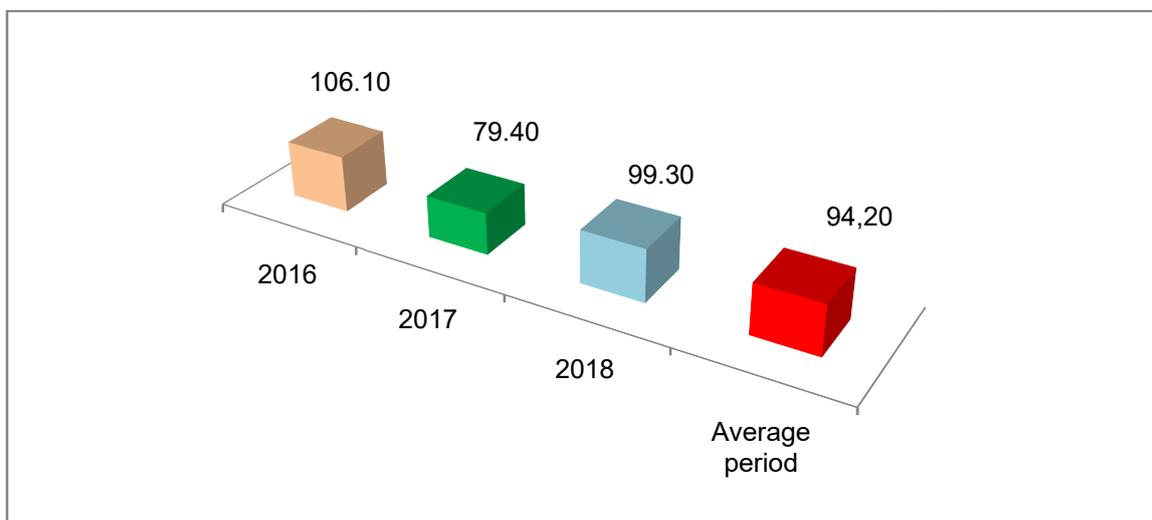


Fig. 4. Annual amplitude of price variation (\$/t)

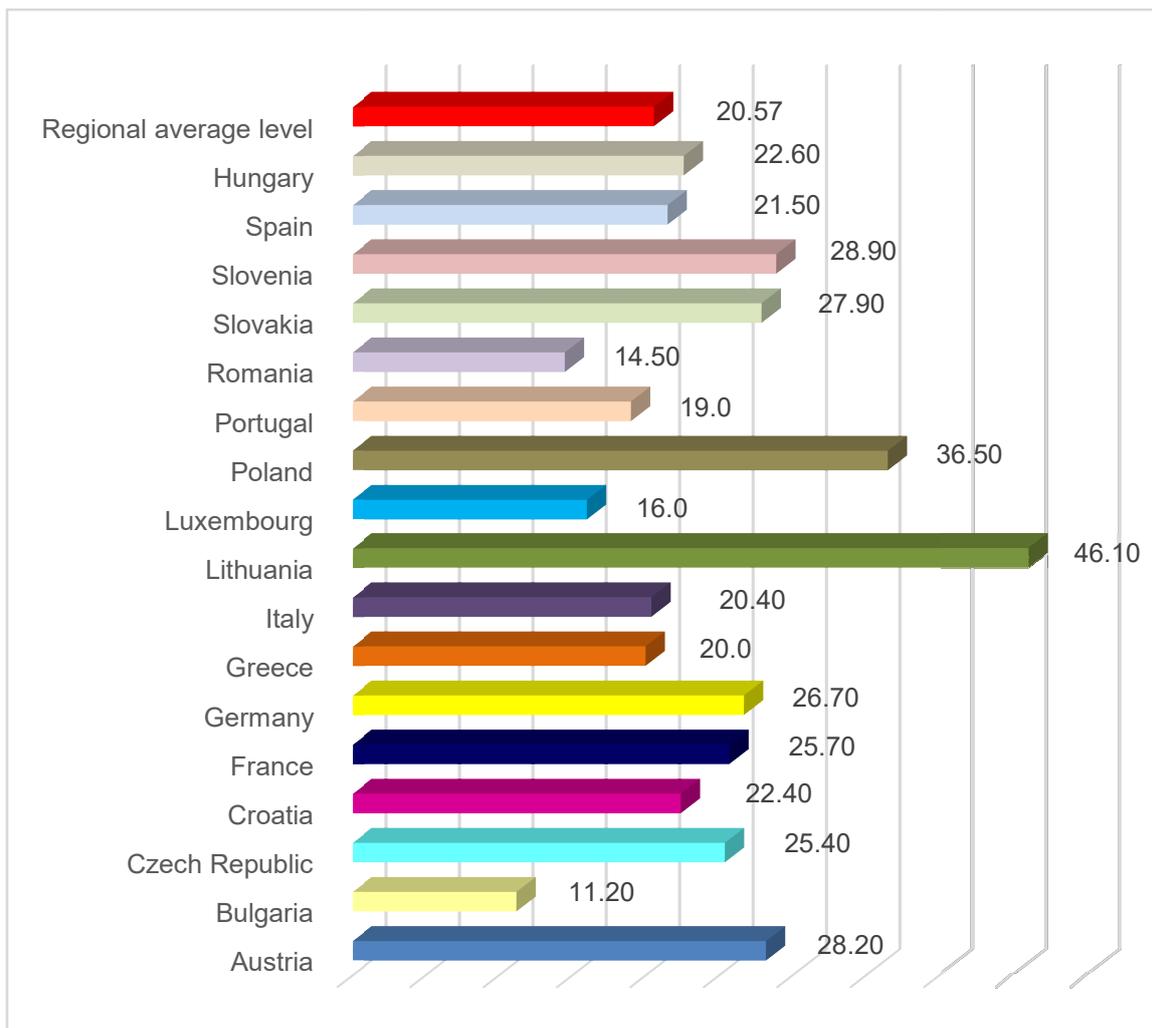


Fig. 5. Amplitude of price variation, at national and regional level (\$/t)

CONCLUSIONS

In the context of an area of over 8,000,000 ha and a total production of over 65,000,000 t, grain maize is a significant crop practiced at regional level.

The trading price registered a national multiannual average of 175.22\$/t, with extreme values of 131.90\$/t for Croatia (2016) and 251.50\$/t for Greece (2018 - total variation of 11.96\$/t).

At regional level, the evolution of the indicator is upward, a phenomenon that manifests itself for the vast majority of component states (Austria, Bulgaria, Czech Republic, Croatia, Denmark, Germany, Italy, Lithuania, Poland, Portugal, Slovakia, Slovenia, Spain and Hungary). There are also states characterized by uneven developments (France, Greece, Luxembourg and Romania).

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