Proceedings
ISBN 978-609-449-148-1 (on-line)

CREDIT SUPPORT FOR AGRICULTURAL LAND PURCHASE IN POLAND - EVOLUTION AND PERFORMANCE

Alina Danilowska
Department of Economics and Economic Policy, Warsaw School of Life Sciences-SGGW, Poland

Received 08 07 2018; accepted 10 12 2018
DOI: 10.15544/njfcongress.2018.06

Abstract

The aim of the paper is to examine the characteristics and evolution of the credit support for agricultural land purchase in Poland and to assess its outcomes after 23 years of operating with a special focus on changes in farm structure. The examined period covers years 1994-2016. Descriptive statistics were applied for analyses of empirical data. The analysis showed that besides the privatization of state land, the preferential credit has been an important tool of agricultural policy for farm structure improvement in Poland for a period of the market economy. It is very remarkable that the credit support has been very well organized, stable and long-term. During this long period there where only minor changes in terms of credits. The data indicate that 14% of the Polish farms were beneficiaries of preferential credits for financing the land purchase. 1.8 million ha of agricultural land (ca 10% of the stock of agricultural land area in Poland in 1994) changed the owner during the examined period. Subsidised agricultural land purchase influenced the farm structure by area. The average per farm area of agricultural land increased from 6.7 ha in 1994 to 10.3 ha in 2016. The share of agricultural land bought with the credit support in market turnover of agricultural land in examined period, estimated at 45%, illustrates the role of this support for improvement of a farm structure. However, the contribution of preferential credits to a sharp increase in agricultural land price was a negative outcome of the support.

Keywords: preferential credit, land purchase, farm structure, credit support.
JEL Codes: Q14, Q15, Q18

Introduction

Implementation of the market economy at the beginning of 90ties of XX century by Poland exposed the agriculture, that was isolated from global food market in the communistic period, to strong global competition. The acceleration of the process of concentration of agricultural production has become one of the most important targets of agricultural policy as the structure of farms due to the area of land was unfavorable. In 1990 the number of private farms was amounted to 2 138 thousand, the average area of agricultural land per farm was 6.3 ha. 52.8% of the farms owned less than 5 ha of land and only 6.1% more than 15 ha (Central Statistical Office, 1991). First years of transition and the comparison of the Polish agriculture with global agriculture unveiled the weaknesses of the Polish one, especially in the area of technology and farm structure.

The economic problem of conducting activity by hundreds of thousands of very small and small farms stemmed from their inability to gain the advantage of economy of scale/size[1], advanced technology, financing the application of means of biological and technical progress and in result to provide sufficient income to their owners or tenants. Assuming importance of economy of scale/size, technological progress and sufficient income in the conditions of strong competition on the global food market, agricultural policy should support the process of enlargement of farm area and abandonment the activity by small or less effective farms[2]. It is worth to add that the term "small farm" is a relative concept, depending on agro-ecological as well as socio-economic consideration. In many countries, a 1 or 2 ha threshold is frequently used to designate farms as small (Lowder et al, 2016). In Europe, the area threshold is generally 5 ha. Proper farm structure is a very complex problem as agriculture can play not only food provider role but many others. In post-soviet countries in the period of transition, agriculture with thousands of small farms was a social buffer (Petric and Weingarten, 2007). Davidova (2014) points that small-scale farming in the EU is very labor-intensive, and socially of key importance in providing some income to millions of farmer households, which might prevent the depopulation of rural areas. Small farms can be valuable providers of public goods connected to agriculture and environment (Boyce, 2004) too.

In Poland as a remedy for the unfavorable farm structure and other problems of agriculture, the system of credit support was created (Danilowska, 2004). The preferential credit for the purchase of the agricultural land has been an important part of it.

The aim of the paper is to examine the evolution of the credit support for agricultural land purchase in Poland and to assess the outcomes of the support after 23 years of conducting the activity with a special focus on changes of farm structure. The examination concerns two problems: (i) the characteristics and evolution of credit support for the purchase of agricultural land, (ii) the identification and assessment of the support outcomes.

[1] See: Duffy (2009), McClelland et al. (1986), Wicka and Wicki (2016).
[2] The literature on intervention in agriculture is vast. About for or against the intervention on agricultural land markest see (Masnak, 2016)

Proceedings
ISBN 978-609-449-148-1 (on-line)

Materials and methods

The examined period covers years from 1994 to 2016. The data and information were taken from different sources like The Central Statistical Office of Poland and The Agency for Restructuring and Modernization of Agriculture (ARMA), the research of the author, and relevant literature. The data used in paper illustrate the examined processes, show the scope of changes and tendencies.

In the analyses, some methods were used. The descriptive method with elements of comparative one was used for characteristics of the credit support and its evolution. The statistical analyses of empirical data were applied to examine the scope, value, and trends in examined processes.

In the paper, the term of the farm structure refers to the land-ownership parameters only. In formal documents and reports of the ARMA, that is a state agency responsible for the support for agriculture in Poland, the increase in the size of farms is taken as an indicator of the improvement of agrarian structure. So, in the paper both terms - farm structure and agrarian structure are used interchangeably. The volume (area) of land purchase in physical hectares is used for the assessment of the improvement.

Results

The background of intervention in farm structure and the forms of intervention

The problem of unfavorable farm structure in Poland in the form of hundreds of thousands of small and very small farms is complex and not new[3]. It has been observed since 60ties of XIX century when millions of peasants have been freed from dependence on the landlords and were offered land ownership[4]. The number of farms and their structure at the beginning of the nineties of XX century has been the results of the complex processes in agrarian structure. Among them, the radical agrarian reform in 1944 which was carried out against the large private land ownership, deserves the special attention as thousands of small farms were created. Data illustrate the significance and permanency of the problem. In 1921, just after First World War there were 3 095 thousands of farms conducting operations in Poland. The participation of small farms (owning less than 5 ha of agricultural land) in a total number of farms was amounted at 65 %, whereas, their participation in the total agricultural land area was much smaller - only 15% (Institute, 1954). Seventy years later, in 1990, the number of private farms of an area exceeding 1 ha of agricultural land was much lower, however, as aforementioned, their number remained significant. The participation of small farms in farm number decreased to 53% but their share in agricultural land owned by private farms increased by 4 percentage points to 18.8% (Central, 1991)[5].

Such a permanency of the farm structure stemmed from a complex economic, political and social reasons rooted in history. D. North (1990) underlines that "*history matters ... because the present and the future are connected to the past by the continuity of a society's institutions. Today's and tomorrow's choices are shaped by the past*".

At the beginning of the transformation to a market economy, two non-rival ways of intervention were brought into operation to improve the agrarian structure in Poland. The privatization of the state-owned land was the first way as about 19% of agricultural land in Poland belonged to the state. The land was mainly maintained by state agricultural enterprises[6]. They faced serious problems with adjusting to market economy conditions. The support for the purchase of agricultural land by private agricultural holdings (family farms, enterprises, individuals) on the agricultural land market was the second way. It has taken the form of the preferential credits for agricultural land purchase. It is one of four types of state intervention in the operation of land market distinguished by Zawojska (2004). In Poland, contrary to other communistic countries, the market of private agricultural land was quite well developed as in communistic period private sector in agriculture prevailed. The privatization of the state-owned land increased the supply of the agricultural land for the private sector (private enterprises and farmers), the support for land purchase could facilitate demand for agricultural land.

As Carnis (2009) mentioned, each governmental intervention requires the existence of a public authority, a bureaucracy, in charge of implementing public policy. Such bureaucratic organizations deserves a thorough investigation, because of their central role in governmental interventions. In Poland, three of such kind state agencies were established in agri-food sector and two of them - The Agency for Restructuring and Modernization of Agriculture (ARMA) and The Agency of State Real Estate in Agriculture (ASREA) haves carried out the intervention in farm structure. ARMA was responsible for the support for restructuring and modernization of agriculture throughout the examined years, whereas, ASREA's task was to administer the stock of state agricultural land and act for the improvement of agrarian structure[7]. Although both of agencies worked for the improvement of an agrarian structure, they operated on different areas - the former on demand side, the

[3] It is necessary to underline that agrarian structure is a part of the broader set of problems than farm structure. The problems related to agriculture in Europe are known following K. Kautsky (1988) as "agrarian question".
[4] The assessment of former structure is an another problem and is beyond the scope of the paper.
[5] In 1990 private farms owned about 77% of the total area of agricultural land in Poland.
[6] About 4% of agricultural land in Poland in 1990 belonged to agricultural cooperatives.
[7] Some years later it changed name for Agricultural Property Agency (APA). In 2017 the merger of the APA with Agricultural Market Agency (the third of the aforementioned agencies) took place.

Proceedings
ISBN 978-609-449-148-1 (on-line)

latter on the supply side. Moreover, they used very different tools of intervention, so their activity for the improvement of agrarian structure could be seen as complementary.

Characteristics and evolution of credit support for the agricultural land purchase

As was mentioned, ARMA has been responsible for the support for the modernization and restructuring of the Polish agriculture and under this task for support for improvement of agrarian structure in Poland. The agency was established by The Act of Parliament in December 1993 and started to conduct operations on 1st January 1994. In the beginning, the Agency executed its tasks mainly through administering of the preferential credit system that was mainly financed by the state budget[8]. Since Poland's accession to European Union, the ARMA has played the role of payment agency and has been responsible for the administration of the support provided under Common Agricultural Policy too. The preferential credits have been granted under so-called domestic support.

In the credit support system, the role of ARMA is to administer of subsidies to the interest rate on preferential credits that are granted by banks from their resources on their own risk under so-called lines of credits, which differ by targets, eligible agents, and the terms. The number of credit lines changed during the examined years. In 1994 there were four lines, but their number increased quickly up to forty seven in 1997 and next, due to a small interest in some lines and a fast increase in cost for the state budget, their number was limited. In 2003, the year before Poland's accession to EU, there were fourteen lines. After accession to EU in May 2004 until 30th of April 2007, on the ground of the so-called "existing aid", the preferential credit system conducted operations on rules used before accession. Next, that measure was adjusted to the Community guidelines about state support for agricultural and forest sectors in 2007-2013. A new regulation introduced the ratio of the intensity of support in the form of the maximum value of credit subsidies. The limits varied between lines from 40 to 75% of credit value. The scope of credit targets and terms of credits did not change noticeably, although the number of credit lines for investment was decreased to eight. The most popular lines were continued. In the following years, the number of credit lines increased again and in 2011 was amounted to 12. What's more, in 2010 the new kind of preferential credit was introduced - credit with the repayment of the part of credit capital by state. In 2015 new regulations were adapted according to the New perspective of domestic support for 2015-2020 and new regulations of EU on de minims support (Commission 2013). The number of credit lines was decreased to five but in the next year was increased again to seven.

Table 1. Credit lines supporting agricultural land purchase due to the years of introduction and duration of conducting the operation (Source: Own research based on Annual Reports of ARMA)

Credit lines	1994	1995	1996-2003	2004-2009	2010	2011-2014	2015	2016
IP	x	x	x	x	x	x	x	x
KZ (RR)		x	x	x	x	x	x	x
MR		x	x	x	x	x		
GR				x	x	x		
OR			x	x	x			
CSK (MRcsk) [2]					x	x	x[2]	

[1] IP - Basic investment credits, since 2015 acronym RR; KZ - Credits for land purchasing, since 2015 acronym Z; MR - Credits to young farmers, GR - Credits for launching or enlargement of family farm, OR - Credits for farm establishing or equipment in the frame of Ministry of Agriculture program of settlement on state land, CSK - Credits with the repayment of part of capital, since 2015 acronym MRcsk

[2] since 2015 available only to young farmers for land purchase

In the examined period, the purchase of land was financed under six credit lines (table 1). They were introduced gradually and conducted operations for different periods. Two of them – Basic investment credit line and Young farmers credit line could finance very broad scope of investment, among others, the purchase of agricultural land. The first was inaugurated in the first year of the preferential credit system operating and has been working steadily until today. Quite long, because for 20 years, the second credit line was available.

Three of credit lines: Credits for land purchase (KZ), Credits for launching or enlargement of the family farm (GR) and Credits for establishing or equipment of farms in the frame of Ministry of Agriculture program of settlement on state land (OR) – were designated especially for improvement of farm structure by area. The credits under the line for land purchase (KZ) and for launching or enlargement of the family farm could be used exclusively for land purchase. Credits for establishing or equipment of farms in the frame of Ministry of

[8] The interest on bank deposits, credits, foreign financial support and others were additional sources but of marginal and decreasing importance.

Proceedings
ISBN 978-609-449-148-1 (on-line)

Agriculture program of settlement on state land (OR) could finance not only land purchase but were extremely unpopular.

Since 2015 only three credit lines from six involved in financing the purchase of agricultural land have conducted operations[9], however, in 2016 the credit line with repayment of the part of the capital was suspended.

In the beginning, the preferential credits could finance only the purchase of land increasing the size of farm till 100 ha and since 2003 till 300 ha[10]. It was connected to regulation establishing area limit for the family farm at 300 ha of agricultural land (Act, 2003). In the context of aforementioned selling of the state-owned land, it is worth to point out, that the preferential credits can't finance the purchase of state land in the case of reimbursement payment for land.

Till 2014, the credits from lines: For basic investment and For young farmers could be fully used for agricultural land purchase. In 2014 it was limited to only 10% of the value of investment financed by preferential credit.

The credits under the main line designed only for land purchase (KZ)[11] have been granted by banks for financing the increase of the size of the existing farm or for creating a new farm by a person aged less than 40 years and in such case, the area of the new farm had to be higher than the area of average farm in region (voivodship). This condition had not been valid in the case of the other credit lines.

Terms of preferential credits were very advantageous for borrowers compared to market terms (table 2). It was very important for farmers especially at the beginning of the transition to a market economy as due to the high rate of inflation, the market interest rates were two digital. What is more, the risk of doing business was high so the credit maturity was quite short – some years, and the grace period was not granted or was short.

To prevent banks from charging an unreasonably high-interest rate on preferential credits, the interest rates on them were administered. Till 2015 the central bank discount rate was taken as a benchmark for setting up the maximal level of bank interest rate. For the most years the cup of interest rate equaled 1.5 of the central bank rediscount rate. Since 2015, the Warsaw Interbank Offer Rate 3M (WIBOR 3M) has served as a benchmark. The maximal interest rate for banks is a sum of WIBOR 3M and 1.8-2.5 % margin.

Table 2. The terms of preferential credits under the most popular credit lines (31 December) (Source: Own research based on Annual Reports of ARMA and Regulation of subsidies to credits)

Credit line	Year	The interest rate paid by the farmer	Grace period (years)	Farmer's min. contribution in financing (%)	Maturity (years)
IP	1994	0.5 of bank interest rate	2	20	8
	May of 2007	0.5 of bank interest rate, min 3%	2	20	8
	2016	0.67 WIBOR 3M, min 3%		20	8
KZ	1995	0.25 of central bank rediscount rate	2	20	15
	May of 2007	0.25 of central bank rediscount rate, min 2%	2	20	15
	2016	0.67 WIBOR 3M, min 3%	2	20	15
MR	1995	0.25 of central bank discount rate	2	20	15
	May of 2007	0.25 of central bank interest rate, min. 2%	2	20	15
	2014	0.4 of bank interest rate min 3%	2	20	15
OR	1995	0.25 of central bank rediscount rate	2	10	15
	May of 2007	0.25 of central bank rediscount rate, min 2%	3	5	15
GR	2004	0.25 of central bank interest rate	2	10	20
	May of 2007	0.25 of central bank rediscount rate, min 2%	2	10	
	2014	0.4 of bank interest rate, min 3%	3	10	20
CSK	2010	bank interest rate (agreement between bank and borrower)	agreement with bank	20	Min. 5, max. 10
	2015	bank interest rate (agreement between bank and borrower)	agreement with bank	10	Min. 5

The interest rate for borrowers has been calculated as the difference between the bank interest rate and the rate of subsidies. Borrowers of basic investment credits paid half of bank interest rate. In the case of credits under other credit lines, the term was more advantageous as the interest rate for borrowers equalled 0.25 value of the central bank rediscount rate. As the central bank interest rates were falling steadily, the minimal interest rate for farmers was introduced. Since 2015, the interest rate for borrowers was established at 0.67 WIBOR 3M but at least 3% regardless of the credit line.

In the beginning, for credits with the partly repayment of credit capital the maximal aid was set up at 22% of credit value but not more than 33 000 PLN[12]. When in 2015 the availability of the credit was limited

[9] Except preferential credits that are brought into operations in the case of natural disasters.
[10] This condition concerns all preferntial investment credit lines.
[11] The credit line GR was of much smaller importance.
[12] About 8500 EUR

Proceedings
ISBN 978-609-449-148-1 (on-line)

only for young farmers[13], terms of credits in respect to farmer's own contribution and a cup of support have become more advantageous. The minimal rate of farmer's contribution fell to 10% and the rate of subsidy increased to 60% of credit value but not more than 70 000 EUR. The maximal maturity ceased to exist.

Results of the credit support for the agricultural land purchase

Till 2004, the statistics considered the number and value of credits and in the case of a credit line for land purchase additionally the area of the bought land. Since 1st of May 2004 ARMA has started to collect information on tangible (in physical units) effects of credits. It enabled to acquire data on what the credits were used for.

The data indicate that till Poland accession to EU, 71 212 preferential credits under the line designed for land purchase (KZ) were granted (table 3). Especially many credits were granted at the beginning of the introduction of this line. After Poland's accession to EU till 2014, the yearly number of this kind of credits was quite stable and fluctuated at around 6 000. In 2014 it plummeted to 1 432 because of the limitation of the subsidies in comparison to former years. In the two following years, the numbers increased but did not gain the former level. The yearly values of credits rose steadily before 2014, in 2014 sunk deeply fourfold and next increased again due to increase in credit number. The total area of agricultural land bought with the credit support in each year followed the changes in the number of credits. Summing up, during the years of 1995-2016 under the credit line for land purchase nearly 136 000 credits were granted. They financed the purchase about 1.1 million of hectares of agricultural land.

Table 3. Number and value of preferential credits for the purchase of agricultural land and area of land bought with the support in 1994-2016 (Source: Own calculations based on data from Annual Reports on Activity of the ARMA for years 1994-2016)

Year	Credits under line for land purchase			Credits under all lines financing the land purchase
	Credit number	Value of granted credits (thousands PLN)	Area of bought land (ha)	The volume of the area (ha)
1994-2003	71 212	1 316 317	414 440	Circa 700 000
2004	6 077	254 397	53 680	102 030
2005	6 267	332 452	98 564	168 967
2006	6 377	460 061	65 860	126 831
2007	5 227	497 499	59 040	159 337
2008	4 719	524 108	44 067	66 578
2009	5 564	706 207	50 392	91 774
2010	5 792	802 512	53 840	73 195
2011	6 562	1 029 953	67 869	89 567
2012	5 368	861 651	56 278	65 684
2013	6 305	941 054	58 413	55 570
2014	1 432	250 226	16 468	28 466
2015	2 402	471 299	19 905	19 905
2016	2 647	505 325	21 096	21 096
2004-2016	64 739	7 636 744	665 472	1 069 000
Total 1994-2016	135 951	8 953 061	1 079 912	1 769 000

In 2004-2016 the credits under other credit lines financed the buying about 400 000 ha of agricultural land. Assuming that in the course 1994-2003 there was the same proportion between area of the land purchased under special credit line - KZ and area of the land bought under other lines as in 2004-2016, the area of purchased land can be estimated at 700 000 ha. In years 2004-2016 the preferential credits supported the purchase of 1 069 000ha of agricultural land. So, during the whole examined period, the preferential credits supported the purchase about 1 800 000 ha of agricultural land. It was about 10% of the total area of agricultural land in Poland in 1994 - the year of credit support system launching. The estimate of the total number of preferential credits for land purchase in a way used for area suggests that 14% of the Polish farms were beneficiaries of support for agricultural land purchase.

The results of the support for the changes in farm structure are shown in table 4. The data indicate that during 1994-2016, the number of private farms exceeding 1 ha decreased noticeably. The share of the smallest farms during first ten years increased but in ten following years declined. The positive changes took place in the remaining groups. The share of farms of size 5-10 ha dropped by 4.3 percentage points, whereas farms of size 10-15 ha slightly climbed by 1.4 percentage points. The positive tendency is observed in the last three groups. The share of farms exceeding 15 ha nearly doubled. The average area of agricultural land per farm increased from 6.7 ha in 1994 to 10.3 ha in 2016.

[13] The credit line for young farmers was abandoned and this credit can be treated as continuation of it.

Proceedings
ISBN 978-609-449-148-1 (on-line)

The evaluation of the contribution of support for land purchase in farm structure changes is difficult. The changes in the average area of farm as well as in farm structure are not very impressive taking into account the 23 years period. Moreover, they were a result of different complex processes and phenomenon As it was aforementioned, the parallel sell and lease of state-owned land took place for the entire period (Masnak 2016).

Table 4. The farms' number, average area and structure by area in Poland in 1994-2016 (Source: Statistical Yearbooks of the Republic of Poland 1995-2017, The Central Statistical Office)

Specification	1994	2000	2005	2010[1]	2016
Individual farms exceeding 1 ha (thousands)	2 030	1 881	1 782	1 480	1 384
Average per farm area of agricultural land (ha)	6.7	8.0	8.6	8.9	10.3
Individual farms by area groups (%)					
1.01-4.99	54.5	56.4	57.9	53.4	53.3
5.00-9.99	26.7	33.7	21.8	23.4	22.4
10.00-14.99	11.0	9.9	9.4	10.2	9.9
15.00-19.99		4.5	4.3	4.9	4.8
20.00 -49.99	7.8[2]	5.2	5.5	6.5	7.3
50 and more		0.7	1.1	1.6	2.3

[1] The data for 2010 according to the latest Agricultural Census
[2] 15 ha and more

However, the supported by preferential credits market turnover of agricultural land estimated at 10% of initial agricultural land stock, contributed to the improvement undoubtedly. Taking into consideration that the changes in agriculture take place in the macroeconomic and social environment, the 10 % could be considered as a quite good result. Jedruchniewicz and Masniak (2014) proved the significance of macroeconomic determinants for land market. Results of their analysis indicate the susceptibility of market prices of agricultural land (what reflect the changes in demand) to periodic fluctuations in the business cycles. Preferential credits facilitated the transactions on the agricultural land market. How important they were, the share of purchase of agricultural land financed by preferential credit in market turnover of such a land clarifies (table 5).

Table 5. The share of agricultural land bought with credit support in market turnover of agricultural land in Poland in 2004-2016 (%) (Source: Author's own calculations based on data from Annual Reports on Activity of the ARMA and data of The Central Statistical Office)

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Share	57	97	64	89	49	75	48	48	23	27	9	9	16

Data indicate that preferential credits financing the land purchase played an important role in the performance of the market turnover of agricultural land in Poland especially in 2004-2011. Their significance was extremely high in 2005 when they financed nearly total turnover. 2007 was the second year with the very high role of preferential credits. In other years during 2004-2011, the credits financed about 50% of agricultural land turnover. In 2012 the share of preferential credit in financing agricultural land sank to 23%, next year it increased a little. It was due to a parallel decrease in the area purchased with the credit support and increase in market turnover. In 2014, the number of subsidized credit fell fourfold what has reflected in the sharp decline in the preferential credits importance in supporting of market turnover. Next year the importance of the credits for land market remained low, and in 2016 increased although not to the previous level.

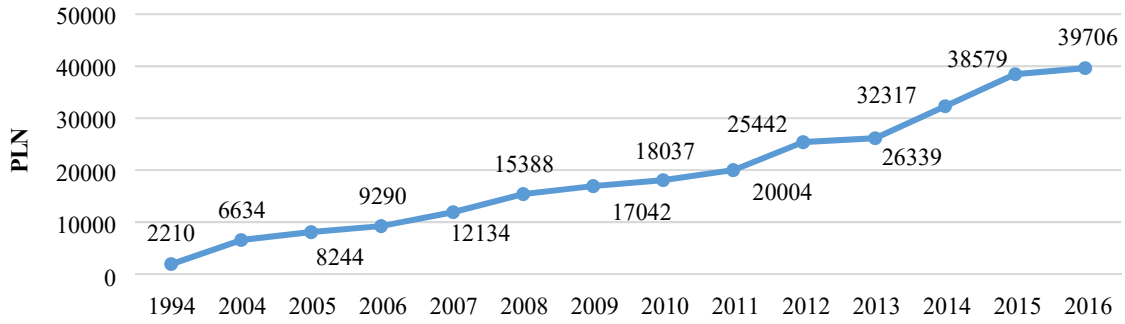

Figure 1. Average prices of arable land in private turnover in Poland in 2004-2016 (Source: Statistical Yearbooks of the Republic of Poland 2005-2017, The Central Statistical Office, Warsaw)

The plummet in the significance of the preferential credits for market turnover of agricultural land stemmed from some reasons: limitation in state subventions, the very high demand for agricultural land and the dynamic increase in prices of agricultural land.

The increase in land prices deserves special attention. The nominal price of arable land in 2016 was 18 times higher than in 1994 (Figure 1). Danilowska and Chmielewski (2011) indicate that the high share of land bought with the support in total market turnover of agricultural land (table 5) proves that preferential credits were partly responsible for the very high growth of land prices. Taking into consideration that the immense increase in land prices occurred after Poland's accession to EU this responsibility was not big. However, it cannot be neglected. Marks-Bielska (2010) showing this aspect of preferential credits for land purchase underlines that relative to income high level of agricultural land prices can be an important barrier in the improvement of area structure of individual farms.

Conclusions

1.The preferential credit has been the important tool of agricultural policy for farm structure improvement in Poland in the period of the market economy – before accession to EU and after.

2. It is very remarkable that the credit support for agricultural land purchase has been very well organized and has been a part of the credit system support for the modernization and restructuring of the Polish agriculture.

3.The credit support for agricultural land purchase lasted for 23 examined years and still works what deserves attention and appreciation as such long-term stability and durability of economic policy measures occur not very often. During this long period there where only minor changes in the terms of preferential credits.

4. The output of the support in the form of area of bought agricultural land amounted to 10% of the stock of the agricultural land in Poland was quite big. The credit support influenced the improvement of farm structure undoubtedly. But the role of availability of credit as a determinant of demand for land is unclear. Subsidized credits can encourage farmers to increase the size of the farm and facilitate allocation of land as a factor of production. It should be considered during assessing the role of the credit support in improvement of land structure that demand for land depends on a vast range of determinants like the phase of the business cycle in economy and perspectives the sector of agriculture faces.

6. Contribution in the quick and noticeable increase in agricultural land prices is a negative result of the credit support for the agricultural land purchase. The increase hindered the market turnover of agricultural land and made the agricultural land less available to farmers.

References

Act of 11 April 2003 on the Formation of the Agricultural System. *Official Journal of Laws* 2003, Nr 64/2003 item 592, Poland.

Act of 5 August 2015 on the Formation of the Agricultural System. *Official Journal of Laws* 2015, item 1433). Poland.

ARMA. 1995-2017. Annual Reports on Activity of the ARMA (1994-2016). Warsaw, Poland.

BOYCE, J. K. 2004. A Future for Small Farms? Biodiversity and Sustainable Agriculture. *Working Paper Series,* Amherst: University of Massachusetts, Political Economy Research Institute, vol. 86, 1-24.

CARNIS, L. A. H. 2009. The Economic Theory of Bureaucracy: Insights from the Niskanen Model and the Misesian Approach. *The Quarterly Journal of Austrian Economics,* vol. 3, 57–78.

CENTRAL STATISTICAL OFFICE, Statistical Yearbook of the Republic of Poland 1991, 1995-2017, Warsaw.

COMMISSION REGULATION (EU) No 1408/2013 of 18 December 2013 on the Application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to de minimis aid in the Agriculture Sector.

DANILOWSKA, A. 2004, Agricultural credit market in Poland – experiences in market economy, *Studies on the Agricultural and Food Sector in Central and Eastern Europe,* Halle: IAMO, vol. 25, 101-118.

DANILOWSKA, A., CHMIELEWSKI, M. 2011. Role of Preferential Credit for Changes of Agrarian Structure in Poland in EU Membership Conditions. *Annals of the Polish Association of Agriculture and Agribusiness Economists,* vol. XIII, no. 8, 45-51.

DAVIDOVA, S. 2014. Small and Semi-subsistence Farms in the EU: Significance and Development Paths. *Euro Choices,* vol. 13, no. 1, 5-9. Available at <https://onlinelibrary.wiley.com/doi/abs/10.1111/1746-692X.12043>.

DUFFY, M. 2009. Economies of Size in Production Agriculture. *Journal of Hunger and Environmental Nutrition, vol.* 4(3-4). pp. 375–392.

HAZELL, P.; POULTON, C.; WIGGINS, S.; DORWARD, A. 2007. The Future of Small Farms for Poverty Reduction and Growth. 2020. *Discussion Paper.* Vol. 42. Washington: International Food Policy Research Institute.

INSTITUTE OF AGRICULTURAL ECONOMICS. 1954. *Village in Numbers*. Warsaw: Ksiazka i Wiedza.

JEDRUCHNIEWICZ, A.; MASNAK, J. 2014. Changes in the Prices of Agricultural Land in Poland. *Socialiniai Tyrimani/Social Research* vol. 2 (35), 86-95.

KAUTSKY, K. 1988. *The Agrarian Question.* London: Zwan Publications.

LOWDER, S. K.; SKOET, J.; RANEY, T. 2016. The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide. *World Development*, vol. 87, 16–29.

MCCLELLAND, J. W.; WETZSTEIN, M. E.; MUSSER, W. N. 1986. Returns to Scale and Size in Agricultural Economics. *Western Journal of Agricultural Economics, v*ol. 11, no. 2. 129-133.

MARKS-BIELSKA. R. 2010. *Rynek ziemi rolniczej w Polsce (The Agricultural Land Market in Poland)*. Olsztyn: Wydawnictwo Uniwersytetu Warmińsko Mazurskiego.

MASNAK, J. 2016. Interventionism on the Agricultural Land Market – A Critical Analysis. *Acta Scientiarum Polonorum. Oeconomia, v*ol. 15, issue 3, 45–54.

NORTH, D. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

PETRIC, M.; WEINGARTEN, P. 2007. The Role of Agriculture in Central and Eastern European Rural Development: an Overview. *Studies on the Agriculture and Food Sector in Central and Eastern Europe,* Halle: IAMO, vol. 25., 1-19.

Proceedings
ISBN 978-609-449-148-1 (on-line)

WICKA, A.; WICKI, L. 2016. Bio-Economy Sector in Poland and its Importance in the Economy. *Proceedings of the International Scientific Conference Economic Science for Rural Development 2016,* vol. 41, 219-228.

ZAWOJSKA, A. 2004. The Process of Land Reforms in Poland: Explanation by Using Theories of Institutional Change and Theories of Political Behaviour. *EJPAU,* vol. 7, issue 1. Available at <http://www.ejpau.media.pl/volume7/issue1/economics/art-01.html>.

Data about the author:

Alina Danilowska. Scientific degree and academic title: PhD. Field of research interest: market failures in agri-food sector, agricultural and rural development policy, agriculture financing, cooperative banking. Title of institution and position: Faculty of Economic Sciences, Warsaw University of Life Sciences-SGGW, associate professor. Post address: 166 Nowoursynowska Street, 02-787 Warsaw, Poland. E-mail addresses: alina_danilowska@sggw.pl. Tel.: +48 506118160, +48 22 5934039