The Origins of Czech Credit Guarantees Programs and the Value of Guarantee Fund Portfolio on Czech Stock Exchanges

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17 December 2009

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Abstract: This paper provides an overview of the credit provision in the Czech Republic at the beginning of the transition period. We show the economic forces leading to the creation of specialized government credit guarantee institution. While we provide a brief overview of different credit support institutions, we concentrate on credit guarantees in Czech agriculture, food industry and forestry. Besides the description of credit support activities, we also pay attention to financial sources of credit guarantee institution. Important financial source was its stock endowment which originated in the Czech privatization scheme. We provide an estimation of the value of this initial endowment according to two stock markets operating in the Czech Republic.

Keywords: Subsidies, Guarantees, Rural Development, Stock Market, Portfolio

JEL classification: Q14, R51.

1 The Empirics of Agricultural Credit

1.1 Financial Situation of Farmers and Agricultural Credit

In the pre-reform period up to the end of 1989, agriculture was a heavily preferred branch of the Czech economy. The standard of living of the agricultural population, especially the level of wages, was approximately equal to the economy-wide averages. The profitability of agricultural production was ensured by indirect government subsidies in the price of agricultural inputs and in food prices.

The majority of agricultural production was realized in cooperatives, which were less directly connected with the government budget and central planning than the state farms and industrial enterprises, which were directly state owned. One of the major tools government used to influence agricultural cooperatives was the state owned banking and credit provision. The credit provision for cooperatives was not as soft as the credit provision for industrial enterprises. As a consequence of this higher level of economic independence of cooperatives the volume of outstanding credit in agriculture was relatively low at the beginning of the reforms in the early 90's. In 1991, the share of credits outstanding as compared to capital stocks was 20% in agriculture while the same indicator in industry was 37% (Statistical Yearbook of the Czechoslovakia, 1992, pp. 177, 180). Approximately 3/4 of agricultural credit was short term credit used primarily for the financing of technological supplies connected with the seasonal character of agricultural production (Becvarova and Fritzova, 1994a, p.2).

This initial situation could suggest that during the transition the credit provision to agriculture would rise to converge towards the economy wide average following the elimination of command economy distortions in resource allocation. But the situation was not so straightforward. It is shown in Table 1 that during the transition period up to the end of 1994, the volume of credit extended to agriculture was steadily decreasing in absolute terms, while total economy-wide credits absolutely increased.

Table 1: Credit outstanding as of year-end.

	Unit	1991	1992	1993	1994	1995
Total credit	bil. Kc	498.7	578.6	672.3	776.5	825.7
Agricultural credit	bil. Kc	36.3	27.4	26.4	25.7	30.2
Share of agricultural credit from total credit	%	7.3	4.7	3.9	3.4	3.7

Sources: 1. Data for 1991; estimated from Czechoslovak data in Statistical Yearbook of the Czech Republic (1993, p.138).

2. Data for 1992-94; Statistical Yearbook of the Czech Republic (1995, p.163).

3. Data for 1995; Selected Indicators of Monetary Development of the Czech Republic (1996, pp.22, 23).

The data in Table 2 show that the decrease in credit provision to agriculture cannot be explained only by the downsizing of agriculture. Following the sharp drop in agricultural production and the reduction of the share of agricultural GDP out of total Czech GDP at the start of the transformation, this share has been stable since 1991. The evidence presented by Table 2 contrasts with the reduction of the agricultural work force (Table 3), which is usually presented by the Czech agricultural policymakers as proof of rapid downsizing of Czech agriculture.

Probably a more important reason for the decrease in credit provision was the unwillingness of commercial banks to extend credit to agricultural firms. This unwillingness is understandable since the usual indicators of economic performance, which are used by bankers in the evaluation of loan applications, were much more favourable for industry than for agriculture during the transition period. The time series of the profitability of revenues, as one of the more important indicators, is presented in Table 4 and it clearly labels agriculture as a very badly performing area in the eyes of bankers.

The bad credit rating of agriculture and the riskiness of agricultural credit is also

Table 2: Gross domestic product at factor costs (in bil. Kc at current prices).

	1989	1990	1991	1992	1993	1994	1995
Czech total	492	515	664	703	799	1000	1160
Agriculture	42	37	35	41	48	58	61
Share of agricultural on total GDP (in %)	8.5	7.2	5.3	5.8	6.0	5.8	5.3

Sources: 1. Data for 1989-1991; Statistical Yearbook of the Czech Republic (1993, p.106).

2. Data for 1992-1993; Statistical Yearbook of the Czech Republic (1994, pp.98, 99).

3. Data for 1994; Statistical Yearbook of the Czech Republic (1995, p.124).

4. Data for 1995; The Estimate of the Creation and the Use of the GDP, 4th quarter of 1995 (1996, p.15).

Note: Beginning with 1993, GDP includes imputed interest.

Table 3: Employment in the Czech economy and in agriculture (in thousands of employees).

	1989	1990	1991	1992	1993	1994	1995
Czech total	5403	5351	5059	4927	4848	4885	5014
Agriculture	533	514	411	312	271	247	222
Share of agricultural on total employment (in %)	9.9	9.6	8.1	6.3	5.6	5.1	4.4

Source: 1. Data for 1990:The Report on the State of the Czech Agriculture (1995, p.249).

2. Agricultural data for 1989, 1991–1995: The Report on the State of the Czech Agriculture (1996, appendix table P1/03).

3. Czech total data for 1989, 1991–1995: The Report on the State of the Czech Agriculture (1996, appendix table A 3.3/01).

Table 4: Profitability of revenues in agriculture and in the whole Czech economy (in %)

	1989	1990	1991	1992	1993	1994	1995
Agriculture	6.82	5.99	-9.45	-15.28	-9.94	-2.57	0.59
Czech total	10.86	10.91	9.21	7.21	2.48	3.43	4.17

Sources: 1. Data for 1989; Statistical Yearbook of Czechoslovakia (1990, pp. 170, 171).

2. Data for 1990; Statistical Yearbook of Czechoslovakia (1991, pp. 168, 169).

3. Data for 1991; Statistical Yearbook of Czechoslovakia (1992, pp.165, 166).

4. Data for 1992; Statistical Yearbook of the Czech Republic (1993, pp. 131, 132).

5. Data for 1993; Statistical Yearbook of the Czech Republic (1994, p. 111).

6. Data for 1994; Statistical Yearbook of the Czech Republic (1995, p. 147).

7. Data for 1995; Revised Financial Indicators of Non-financial Enterprises and Corporations in 1995 Yearly and Quarterly (1996, pp. 13, 71).

documented by the high percentage of classified credit (defined as doubtful, losing, non-standard and other kinds of very risky credit), which in November 1994 accounted for 58.9% of the total agricultural credit. The corresponding economy-wide share was 35% (The Report on the State of the Czech Agriculture, 1995, p.137).

Czech farmers (together with entrepreneurs in all branches of the Czech economy and, for that matter, together with entrepreneurs in other transition economies who were not used to high open inflation under a centrally planned economy) loudly complained about high interest rates. The data in Table 5 show that in comparison with the level of inflation, the interest rates seem quite reasonable.

1.2 Government Support to Agriculture

Up to the end of the 80's, the government support of agriculture in all transition economies had a very different nature and forms as compared to the situation in the 90's. In the pre-reform period, agriculture in all transition countries was administratively isolated from

Table 5: Interest and inflation rates (in %)

	1985	1989	1990	1991	1992	1993	1994	1995
Average interest	5.04	5.70	6.16	14.46	13.53	14.08	13.11	12.80
-short term	NA	NA	NA	16.00	15.94	15.61	13.37	12.73
-intermediate term	NA	NA	NA	14.18	15.64	15.91	14.96	14.33
-long term	NA	NA	NA	11.22	9.96	10.42	10.96	11.35
Inflation rate	2.20	1.00	9.70	56.60	11.10	20.80	10.00	9.10

Source: 1. Credit data for 1985–1992; Statistical Yearbook of the Czech Republic (1995, p.139).

2. Credit data for 1993–1994; Statistical Yearbook of the Czech Republic (1995, p.163).

3. Credit data for 1995; Selected Indicators of Monetary Development of the Czech Republic (1996, p.75).

4. Inflation rate for 1985–1994; Statistical Yearbook of the Czech Republic (1995, pp.26-27).

5. Inflation rate for 1995; Monthly Statistics of the Czech Republic (1996, p.146).

the world market, so the export and import interventions had very different forms from those used in market economies. In the internal markets, the support for agriculture was primarily channelled indirectly through subsidies connected with prices of agricultural inputs and outputs. Significant support to agriculture also went through general social programs designed to improve the quality of life of the population as a whole and to equalize the standards of living between rural and urban populations.

From the beginning of the 90's, the Czech government abolished the previous interventions in pricing goods and it also rejected the idea of the "welfare state." In 1991-1993, the main tools of government intervention in Czech agriculture were the State Fund for Market Regulation and the subsidies provided under the subsidy programs of the Ministry of Agriculture.

The State Fund for Market Regulation (SFMR) is a government run agency, which buys certain agricultural products under certain conditions, stores them (or arranges for their storage by contract with some commercial enterprises) and again sells these products in domestic or foreign markets. In this way, SFMR is engaged in the creation and implementation of both domestic and foreign agricultural trade policies of the Czech government.

SFMR was designed to work both as a market stabilizer and a farmers' support program. During the first years of its existence, its programs involved many agricultural commodities. The gradual tendency was to narrow its focus, so that in 1995 it was only engaged in the trade of cereals and milk products. For farmers the forward buying of agricultural commodities by SFMR served as a very important source of money paid in advance under favourable conditions.

The subsidies provided under the subsidy programs of the Czech Ministry of Agriculture were always targeting some special goals. Under these programs, in the majority of cases, the farmers had to formally apply for a given program and the Ministry of Agriculture had no obligation to accept the application. The support included a very wide array of subsidized activities ranging from the support of beef pastures to the creation of information

systems for agriculture. The methods of support were also varied from direct monetary payments to direct loans or subsidies for interest payments on ordinary commercial loans.

From the beginning of 1994, this system was supplemented by the Support and Guarantee Fund for Farmers and Forestry (further abbreviated as the Guarantee Fund), which came to be viewed as the single most important instrument of government support for agriculture, as emphasized by the Czech Vice-Prime Minister and Minister of Agriculture Lux (1996). The importance of the Guarantee Fund is obvious from the comparison of the government budget money budgeted in 1996 for agriculture through the Guarantee Fund, which was 3.1 bil. Kc (Lux, 1996), with the money budgeted for the subsidies programs of the Ministry of Agriculture, which was 2.4 bil. Kc, and with the money budgeted for SFMR, which amounted to 1.5 bil. Kc (Doucha, 1996).

1.3 The Sources of Guarantee Fund

The Guarantee Fund was founded on July 22, 1993 as a stock company. The Ministry of Agriculture, represented by a Minister of Agriculture, is the only shareholder of the Guarantee Fund. The Guarantee Fund started its support and guarantee activities in March 1994.

The starting capital of the Guarantee Fund was composed from a subsidy of 2.65 bil. Kc from the government budget and from the portfolio of shares in the nominal value of 3.8 bil. Kc. These shares were primarily shares of the food industry enterprises reserved by the governmental Fund of National Property from the first wave of voucher privatization. These shares were sold by the Fund of National Property to the Guarantee Fund at the symbolic price of one thousandth (1/1000) of their nominal value. Of course, the nominal value of this portfolio was quite different from its market value. According to my estimations given in appendix 2, the market value of that portfolio at the beginning of 1994 was somehow more than one half of its nominal value (depending on assumptions used, our estimation

is in the range of 2.07 bil. Kc to 2.5 bil. Kc).

In 1995, the Guarantee Fund was given 2.1 bil Kc from the government budget and its portfolio was again supplemented by the shares of some enterprises engaged in the storage and processing of agricultural raw materials. These shares from the second wave of voucher privatization, in the nominal value of 1.9 bil Kc, were again sold to the Guarantee Fund by the Fund of National Property with a price of one thousandth of their nominal value.

For the year 1996, the government budget allocated 3.1 bil Kc for the Guarantee Fund. The Czech government also decided to give the Guarantee Fund some more shares from the Fund of National Property and from the Land Fund in 1996 (Slavicek, 1996, p.5).

The Guarantee Fund operates as a separate legal entity which means that once the Guarantee Fund obtains money from the government budget, it is not obliged to return the remaining money not used for guarantees or subsidies at the end of year.

1.4 The Programs of the Guarantee Fund

The Guarantee Fund provides guarantees and/or subsidies of the credit extended to the entrepreneurs in agriculture and forestry by commercial banks. According to the Guidelines for the Provision of Guarantee and Subsidy through the Guarantee Fund (1996), the maximum size of the guarantee depends on the duration of the loan. It is 50% of the total size of the loan for loans up to 2 years, 70% for loans between 2 and 5 years, and 85% for loans over 5 years.

The size of the interest rate subsidy is stated quarterly by the board of directors of the Guarantee Funds. During the whole period of 1994-1995, it was stated as 10%. It is possible to obtain a higher guarantee of up to 100% or a higher subsidy. The size of the subsidy must always be such that the borrower pays at least 1% interest himself.

There are some conditions which determine who is eligible for support by the Guarantee Fund. The most important of them are concerned with definitions of who should be

considered a farmer (or as the entrepreneur in forestry) for the purposes of the Guarantee Fund. The important condition for cooperatives is that the support of the Guarantee Fund could be given to them only if they already satisfied all the requirements connected with the return of restituted property. The satisfaction of this requirement is determined by a county officer of the Ministry of Agriculture. This condition gives the ministry a powerful tool to coerce cooperatives to fulfil their obligation to the people to whom the cooperatives have some obligations concerning property restitutions.

Any guarantee or subsidy has to be provided in the framework of some of the following programs of the Guarantee Fund. As of March 1996, there are 9 programs in force.

The most important of them is the Farmer program. This program is aimed at supporting investment in agriculture. It covers the purchases of machinery and animal herds, building investments and other agricultural investments. Both guarantees and subsidies are provided in this program.

The Services and Running Expenses programs are the next most important programs. The Services program is used to support investments in machinery purchases for enterprises providing productions services for agriculture. The Running Expenses program covers credit for seeds, fertilizers, payments for technological services provided to farmers, and credit for other operative expenses. Both guarantees and subsidies are provided in those programs.

The New Owner program provides a 100% guarantee for the first repayment of the loan for borrowers who bought government property in order to use it for farming.

The Restitution program is designed to guarantee loans taken by cooperatives in order to pay restitution claims to former members or to people whose property a cooperative uses.

The Inventories program was constituted to help those farmers who privatized former government owned state farms. These farmers are now liable for old loans issued for material inventories connected with the seasonal character of agricultural production. The

Inventories program provides a guarantee of up to 30% of the value of such loans.

The remaining three programs (Landscape, Youth, and Agro-region) are used only as a supplementary bonification to the basic programs: Farmer, Running Expenses and Services. All these programs increase the interest rate subsidy provided in the basic program by a given number of percentage points.

The Landscape program can be used by farmers whose land is in national parks, water source areas or other environmentally protected areas. These geographical areas eligible for the Landscape program are listed in the environment protection laws.

The Youth program can be used by young farmers up to the age of 35 years.

The Agro-region program is designed to provide support to agricultural activities in geographical areas with a high level of unemployment or in areas with naturally difficult conditions for agricultural production. The list of these areas is provided by the administration of the Guarantee Fund.

Besides the provision of credit subsidies and guarantees, the Guarantee Fund sometimes uses its money to solve some pressing problems of agricultural finance. An example of such an activity was the use of 159.8 mil Kc of Guarantee Funds money in 1994 to purchase the receivables to be received by primary agricultural producers from meal and milk processing firms. The Guarantee Fund paid farmers 60%-80% of the nominal value of these receivables. These interventions show how the Ministry of Agriculture uses its position as 100% shareholder to solve some problems which, according to its mission statement, should not be dealt with by the Guarantee Fund.

1.5 Results of the Operations of the Guarantee Fund

The total volume of support provided by the Guarantee Fund according to its different programs since its beginning in March 1994 up to the December 19, 1995 is given in Table 6

Table 6: Activities of Guarantee Fund According to Programs

Program	Applications total (Number)	Accepted applications (Number)	Rejected applications (Number)	Size of loan (Ths.Kc)	Guarantee (Ths.Kc)	Subsidy (Ths.Kc)
Running expenses	1663	1541	122	4158479	749378	419181
Farmer	3599	3330	269	10936296	4408226	2744562
Services	249	226	23	1220923	790802	305874
Restitution	12	11	1	17069	0	3320
New owner	27	19	8	31421	31421	0
Landscape	1039	963	76	0	0	0
Youth	631	589	42	0	0	0
Agro-region	633	594	39	0	0	0

Source: Slavicek (1996).

Guarantee Fund support was given to practically all applications which were cleared by the banks. 423 applications were rejected because of some violation of the requirements given in the by-laws of the Guarantee Fund, and not based on the economic analysis of the application package.

The weighted average of the interest rates for the loans supported by the Guarantee Fund was 15.06%, which is approximately 2 percentage points higher than the economy-wide interest rates given in Table 5. This fact indicates that probably banks charge somehow higher interest rate for the guaranteed loans than would be justified by a risk category of these loans. Due to the interest rate subsidy, the weighted average of the interest rates paid by the farmers was only 3.80%. For the farmers involved in the supplementary programs (Landscape, Youth, and Agro-region), which together accounted for 42% of all accepted applications for support, the interest rate paid by a farmer was given by the administratively stated lower bound of 1%. This empirical evidence shows that banks are not able (or not willing) to fully exploit the possibilities of government interest rate subsidies

Table 7: Activities of Guarantee Fund According to Type of Firm

Type of firm	Applications total (Number)	Accepted applications (Number)	Rejected applications (Number)	Size of loan (Ths.Kc)	Guarantee (Ths.Kc)	Subsidy (Ths.Kc)
Family farmer	2470	2279	191	3595872	1571636	891950
Limited liability comp.	998	891	107	4019889	2053412	784201
Joint stock comp.	466	430	36	2703042	890396	602496
Cooperative	1540	1469	71	5808690	1413973	1148276
Others	76	58	18	236695	50410	46027
Total	5550	5127	423	16364188	5979827	3472950

Source: Slavicek (1996).

and to raise the interest rate (before deducting the government subsidy) high above the market interest rate.

The fact, which came as a surprise to the designers of the Guarantee Funds, is the very low default rate of the farmers involved in the programs of the Guarantee Fund. Up to the end of 1995, there were only 8 calls for the Guarantee Fund to pay its guarantees in the total value of 27.7 mil Kc. Two of them were from one cooperative which is presently in liquidation; one was from a firm providing services for agriculture. The remaining five defaults, in the total value of 13.2 mil Kc., were from five private farmers.

The decomposition of the Guarantee Fund support, according to the ownership form of the enterprise, is given in Table 7 for the cumulative data covering the period from March 1994 up to December 19, 1995. The data show that the largest recipients of the support were cooperatives, which accounted for 35.49% of the 16.36 mil Kc. total volume of supported credit. This is somehow lower than the share of the cooperatives in the total area of Czech agricultural land, which was 47.7% in April 1995 (The Report on the State of the Czech Agriculture, 1995, p.85).

The high share (44.45%) of family farmers out of the total number of accepted appli-

cations for supported loans is intuitively plausible since it shows that, on average, family farmers ask for lower loans than cooperatives or other forms of farms.

Since the beginning activities of the Guarantee Fund up to the December 19, 1995, credit support was provided for loans realized through 34 banks, as it is shown in Table 8. The most interesting fact shown in Table 8 is that 63.22% of all supported credit was extended by two big banks. Thirty banks with small shares of the supported credit accounted only for 13.68% of the total volume of the supported credit.

In order to determine what are the social, economic, and technological characteristics of the recipients of the Guarantee Fund support, I computed correlation coefficients ρ between the volume of supported credit extended in each county of the Czech Republic and a number of characteristics of each county.

The most tight correlation is for the gross agricultural production per hectare, where $\rho = 0.53$. This shows that the support goes to areas with high levels of production. This conjecture is also supported by a positive correlation for the production ability of agricultural land $\rho = 0.26$. The production ability of agricultural land is a technological coefficient based on the energy equivalent of agricultural production which can be produced on a given land. Similarly, the correlation coefficient for steepness of land ($\rho = -0.34$) and for the elevation over sea level ($\rho = -0.13$) show that the support does not go to mountain or hilly regions.

As could be expected, the support of the Guarantee Fund is not used much in industrial regions. This is documented by the correlation coefficient $\rho = -0.21$ for the level of nonagricultural production per person and by the correlation coefficient $\rho = -0.28$ for the population density.

There is no strong relationship between the support by the Guarantee Fund and the desirability of living in a given county, as proxied by the net migration balance. The correlation coefficient for this characteristic was $\rho = 0.04$. Also, the relationship between the support by the Guarantee Fund and the level of unemployment is quite weak, $\rho =$

Table 8: Activities of the Guarantee Fund According to Banks

Name of bank	Applications total (Number)	Accepted applications (Number)	Rejected applications (Number)	Size of loan (Ths.Kc)	Guarantee (Ths.Kc)	Subsidy (Ths.Kc)
Komercni banka	1873	1740	133	6130651	477572	1219622
Agrobanka	1666	1568	98	4214424	2167216	826946
Ces. sporitelna	839	780	59	1994700	989035	544750
Inv. a Postovni	502	459	43	1785928	1054567	386579
Ekoagrobanka	100	91	9	156481	58576	33208
Banka Hana	92	80	12	206754	32701	27637
Kreditni banka	81	49	32	170935	67146	46206
Zemska banka	80	74	6	144594	52549	12674
Ces. pojistovna	77	75	2	103540	12950	17535
Moravia banka	43	40	3	147658	98317	46074
Wein. Sparkasse	37	36	1	301319	254820	49376
Bank. dum SKALA	21	16	5	322620	273122	83881
Universal banka	18	16	2	20370	10094	2137
Pragobanka	17	15	2	103699	53729	11308
Waldvier. Spark.	16	13	3	143830	120331	51245
Foresbank	14	14	0	55952	41306	7998
Cs. obchodni	12	10	2	24741	12880	6168
Evrobanka	12	10	2	11842	6442	2718
Banka Bohemia	9	8	1	10036	200	827
Velkomoravska	8	7	1	23325	14228	1798
COOP banka	5	4	1	5275	2200	547
GiroCredit	5	5	0	147850	110973	53689
Union banka	3	3	0	45000	36750	12384
Plzenska banka	3	3	0	8664	0	751
Podnikatelska	3	2	1	8550	6623	762
Unidentified	2	0	2	0	0	0
Ceska narodni	2	2	0	27600	0	3186
Credit Lyonnais	2	1	1	6000	0	2462
AB banka	1	1	0	1000	0	188
Interbanka	1	1	0	600	0	61
Creditanstalt	1	0	1	0	0	0
Bank Austria	1	1	0	7700	0	0
Bayerische Vere	1	0	1	0	0	0
BNP Dresdner	1	1	0	1450	0	0
Prvni mestska	1	1	0	1100	0	203
Spar. Muhlvierte	1	1	0	30000	25500	20016

Source: Slavicek (1996).

-0.05.

The measurements of correlation show that the Guarantee Fund should not be viewed primarily as a tool of social policy alleviating social tension in poor areas unsuitable for agricultural production and suffering from depopulation. On the contrary, the support of the Guarantee Fund goes to the areas with good natural conditions for agricultural production. The strong correlation between the gross agricultural production per hectare and the volume of credit extended with the Guarantee Fund support emphasizes the role of the Guarantee Fund as a production promoting mechanism.

1.6 Programs Similar to the Guarantee Fund

1.6.1 The Czech Programs

The start of the Guarantee Fund in the Czech Republic was preceded by the establishment of two similar institutions outside of the area of agriculture. These are the Exports Guarantee and Insurance Company (EGIC) and the Czech-Moravian Guarantee and Development Bank (CMGDB).

The EGIC was founded in 1992 with starting capital provided by the government budget and in the following years it received additional subsidies from the government budget. The shareholders of the EGIC are the Czech economic ministries. Its main activities are the insurance and provision of credit guarantees for export and import credits and the provision of interest rate subsidies to exporters.

The CMGDB was also founded in 1992. Its mission was to be a specialized bank providing services and government support to small and intermediate entrepreneurs. The Czech government, represented by the Ministry of Economy holds 32.7% of the shares of the CMGDB. The rest of the shares are held by five commercial banks. The Czech government provided part of the starting capital of the CMGDB and the Czech government also provided a reserve fund for the CMGDB. Every year the Czech government also gives

bank budget funds to finance special support programs (Cernohorsky, 1995). Several of these programs exist.

The Start and Development programs are the most important in the terms of spend resources. The Start program is used by small enterprises with less than 25 employees for financing projects with projected costs less than 10 mil Kc. The Development program can be used by firms with 500 employees or less. To be eligible for support from either of these programs, the project has to satisfy at least one of a number of criteria, such as the creation of new jobs, the use of progressive technologies and so on. Generally it seems that similarly, as in the case of agricultural Guarantee Fund, it would be possible to show for almost any project that it satisfies some of these conditions used for inclusion in the programs of CMGDB. For the Development program, support is restricted to projects realized in one of the three listed counties.

There are many similarities between CMGDB and the agricultural Guarantee Fund. Both of them provide guarantees and interest rate subsidies for credits provided by commercial banks in the framework of the special programs.

The important difference between these two institutions is that CMGDB acts more like an independent banking institution and less like a government agency disbursing government budget money to the targeted population. This is documented by the fact that the CMGDB requires payment of a guarantee fee from the receiver of the guarantee as opposed to the Guarantee Fund which provides the guarantees for free. Besides the disbursement of credit guarantees and subsidies, the CMGDB also serves as an agency for the distribution of some government financial support for some activities not connected with credit provision. Finally, the CMGDB is also active as an ordinary commercial bank in the area of investment banking.

1.6.2 The Western Programs

The existence of EGIC and CMGDB was an obvious domestic source of inspiration in the creation of the Guarantee Fund. Nevertheless, the primary source of inspiration for the Guarantee Fund for Czech agricultural policymakers and agricultural economists was the U.S. Farmers Home Administration (FmHA). This is documented in a number of articles in Czech academic journals [Becvarova (1993a,b, 1994), Doucha (1993a,b), Prouza (1994)]. While the idea of the provision of loan guarantees and subsidies to the farmers is the same both in the U.S. and in the Czech Republic, there are significant differences between both countries' approaches.

The most important difference is that the Czech borrowers who will be provided government support are selected by commercial banks. The Guarantee Fund provides its support almost automatically contingent upon the decision of the bank and upon the satisfaction of the general eligibility conditions. This feature is connected with the absence of the huge country-wide administration network of the support programs in the Czech Republic as opposed to the more than 2000 offices with more than 11000 full time employees in the U.S. FmHA (FmHA, 1990).

The Czech Guarantee Fund is much more specialized in the provision of credit subsidies and guarantees to agriculture and forestry and does not provide direct loans or other types of support as does FmHA. It also does not provide a wide array of support programs to non-agricultural businesses and social activities as is the case with FmHA.

The Farm Credit System also plays an important role in the U.S. support of farmers, which does not have any counterpart in the Czech Republic.

The situation of farm credit in EU countries is different than the situation in the U.S. Generally, there is much less attention devoted to the support of farm credit in the EU than in the U.S. Institutional representation of this difference is the fact that there is no special institution of farm credit support included in the Common Agricultural Policy (CAP) of

the EU.

Nevertheless, there are farm credit programs run on a national basis in individual member states of the EU. But the weight given to these programs is quite different in individual countries. It ranges from the strong governmental interventions in France to the near absence of any government run farm credit programs in the United Kingdom. The low attention given by the EU to farm credit is shown by the fact that as opposed to huge literature about CAP, we were able to find only one book providing an overview of the farm credit policies in the EU countries. This book (Balz, Losch, Meimberg, and Mahlau, 1993) was published in German, and it was used as a major source for the overview of EU farm credit policies prepared in Czech by Becvarova and Fritzova (1994b).

The approach of the EU to farm credit programs is especially important for transition economies planning to join the EU in the near future. From this point of view, the most relevant is the approach to agricultural credit in Portugal, which became a member of the EU in 1986. Similar to the Czech Republic, Portugal is a small country with a GDP much lower than the average of rich EU countries. The less developed rural structure and the high share of informal credit in the total agricultural credit make Portugal also a bridging case between the conditions of European agricultural credit markets and the conditions in rural credit markets of developing countries.

In the period before EU accession in 1986, some agricultural credit programs were operational in Portugal. The most important of them was the SIFAP program of interest rates subsidies. As opposed to the Czech bank driven programs, the SIFAP program was subjected to extensive government approval procedures. Farmers intending to obtain SIFAP credit subsidies were required to submit a very detailed investment plan by completing a forty-page application form. These were then reviewed for approval by the supervisory government agency and by the staff of the commercial bank to which the loan application was submitted. This costly bureaucratic set of procedures led to lengthy delays of approvals and created considerable uncertainty as to the chances for success of a credit support appli-

cation. Typically, only larger farmers who could more easily afford high transaction costs were the recipients of the benefits of the SIFAP program (Pearson, Monke, and Avillez, 1985).

The accession to the EU and to the CAP does not automatically imply the obligation to discontinue the national credit support programs. The adoption of the CAP requires only the abolition of all commodity-specific subsidies, except as permitted by individual CAP commodity regimes. Since the credit support programs are usually not commodity-specific, they are allowed to coexist with the CAP. Nevertheless, after the accession of Portugal into the EU, the interest rate subsidies program SIFAP was discontinued. It was replaced by the farm investment subsidies program under EC Regulation 797/1985. The 797 program consists of capital subsidies through which the government pays a specified percentage of the capital costs of qualifying investments directly. A very important institutional feature of the 797 program is that the application process for 797 capital subsidies is much less cumbersome than was that for SIFAP interest subsidies.

The dominance of direct subsidies over interest rate subsidies was clearly revealed after 1991, when Portugal received permission from the EU to offer farmers the choice between capital subsidies and interest rate subsidies. According to Monke et al. (1993), this permission did not lead to a switch from direct subsidies to interest rate subsidies. Portuguese banks did not show much interest in establishing agricultural lending programs using interest rate subsidies. The farmers also preferred the direct capital subsidies which do not necessitate formal borrowing and which place a much lower administrative burden on farmers.

The Portuguese experience shows that the accession of the Czech Republic should not be by itself a reason for discontinuing the credit guarantees and interest rate subsidies programs. The low administrative requirements of the Czech Guarantee Funds programs lead to the conjecture that it could overcome the problems which led to the death of the Portuguese interest subsidies program.

There also exist a number of non-agricultural credit guarantee schemes in developed countries (US, Canada, United Kingdom, Germany, France, Italy, Netherlands), as described by Levitsky and Prasad (1987) and by Barrett et al. (1990). These schemes are usually designed to help small and medium sized businesses. These schemes differ widely according to their definitions of small and medium sized businesses, according to types of projects eligible for support, according to loan security and borrower commitments required and according to the level of guarantees and premium fees paid by the borrower.

1.6.3 The Programs in Transition Economies

There are significant attempts to support agricultural credit in all European transition economies. The approaches are different according to the position of agriculture in the national economies of the individual countries and according to their general economic philosophies.

The Slovak government's agricultural policy is very similar to Czech policies, as a legacy of their common heritage. The design of the Slovak Guarantee Fund was generally copied from the Czech design. The most significant difference between the Czech and Slovak Guarantee Funds is in the sources of financing. The Slovak Guarantee Fund did not obtain the portfolio of shares to finance its activities. Instead it relies on direct appropriations from the government budget and on a share of proceeds obtained from the sale of state owned food industry enterprises.

As opposed to the Czech Republic and Slovakia, there is strong tendency to establish not only an "administratively thin" credit support fund, but also to create special institutions specialized in rural credit provision in other European transition countries.

In Hungary a direct government provision of subsidized agricultural credit is provided by the Hungarian Agricultural Development Fund. Funds and expert assistance provided by the EU PHARE program are used for the development of savings cooperatives. There was also established, with the financial support of PHARE program, the Agricultural

Enterprise Credit Guarantee Foundation in Hungary (Swinnen, 1995). As far as we know, there does not exist any special credit guarantees institution in Poland. Agricultural credit support in Bulgaria is organized primarily through credit subsidies for loans provided by commercial banks and through the establishment of special banking institutions specialized in direct provision of subsidized agricultural loans (Sturgess, 1994).

Agricultural credit in Romania is supported by direct subsidized loans from the government and by support to specialized agricultural commercial banks. Since the beginning of August 1994, the Rural Credit Guarantee Fund (RCGF) is also operating in Romania (Diacenco and Leonte, 1995).

According to the information available, it seems that the RCGF combines the good business practices of the U.S. FmHA with the strongly specialized approach of the Czech Guarantee Fund. The RCGF requires commercial banks, whose loans it guarantees, to pay a guarantee fee depending on the size of the loan. The RCGF provides its own analysis of each credit application and does not provide virtually automatic guarantees as does the Czech Guarantee Fund. The RCGF only provides guarantees for agricultural loans and it is not engaged in any other activity.

There also exist a number of rural credit support schemes in the developing countries all around the world. The empirical experience from those programs is collected by Adams, Graham and Von Pischke (1983), and by Von Pischke (1992). The general lesson from developing countries is that the default rates are typically very high and that many of the benefits of these programs appear to go to the wealthier farmers.

2 The Value of the Portfolio Endowment of the Guarantee Fund

The accounts of the Guarantee Fund operate with the nominal value of its endowment portfolio. This nominal value is based on book values of the food enterprises, the shares of which compose the Guarantee Fund portfolio. Even taking into account inflation, the book value of these enterprises is still much higher than their real market value.

The easiest estimation of the market value of the share portfolio would be given by:

$$H(1) = \sum_{i=1}^{n} q_i p_i, \tag{1}$$

where $i = 1, \ldots, n$ is the index of the firm, whose shares are in the portfolio,

p_i is the stock-exchange price of one share of the firm i,

q_i is the number of shares of the firm i in the evaluated portfolio.

Unfortunately, the underdeveloped Czech capital market at the time of the establishment of Guarantee Fund did not allow to find the market price of share just by looking at the everyday stock exchange quotation.

The situation is also complicated by the parallel existence of two stock exchange systems in the Czech Republic. One of them is the RMS system, which was created in order to administer voucher privatization. The other is the Prague Stock Exchange (PSE), which was founded with the goal to create a stock exchange which would evolve into the standard western type of stock exchange.

In 1993 and 1994, both these stock exchanges traded in shares of approximately equal sets of enterprises, but they operated under different rules. The common mode of their operations was that they operated in a discrete time framework of separate rounds. During the period between their rounds, they collected the offers and bids for the shares, compared them and announced the results of a given round. One of the differences between these systems was that the periods between the rounds of RMS were longer than it was in the

case of the PSE.

We have evaluated the value of the portfolio of the Guarantee Fund separately based on the data provided by trading on the RMS and on the PSE.

The initial portfolio of the Guarantee Fund consisted from shares of 101 firms. For the evaluation of the portfolio, we have used the data generated by trading up to the end of 1993.

2.1 RMS

The RMS trading used in our estimation covered seven rounds starting in September 1993. The data released by RMS provided the so called "auction prices" for all 101 firms in the portfolio of the Guarantee Fund in each of these seven rounds. Because of the discrete character of trading and because of the start of the trading from a practically arbitrary point which was given by the book value of shares the algorithm used by RMS for the determination of auction prices needed several rounds of RMS to converge to some meaningful values.

The resulting market value of the portfolio of the Guarantee Fund as of the end of 1993 is given in column 8 of Table 9 as H(1) = 2.15 bil Kc.

The history of the evolution of the value H(1) of the portfolio of the Guarantee Fund is given in Table 9. It shows that up to the fifth round, the value H(1) decreased with decreasing speed. Since the sixth round there was an increase in the value of the portfolio given in column 8. The same pattern was also followed by the average price of share (column 6), which we defined as the total volume of really performed transactions in Kc (column 7) divided by the total number of shares which were really traded (column 3). The relation of the portfolio value H(1) and this average share price can be seen from the column 13 of Table 9. This column is computed as value H(1) from column 8 divided by the total number of shares in the portfolio of the Guarantee Fund.

Table 9: Firms in the portfolio of Guarantee Fund,traded in RMS – part 1

Round number	Number of firms	Number of traded shares	Demand for shares	Supply of shares	Average price of share	Volume of trade	Value of portfolio H(1)
Units	(number)	(number)	(number)	(number)	(Kc)	(mil. Kc)	(bil. Kc)
1	2	3	4	5	6	7	8
1	101	1107	1330	169285	766	0.85	3.708
2	101	1034	1650	36597	572	0.59	2.485
3	101	1595	2769	17359	340	0.54	1.761
4	101	2674	7505	7945	311	0.83	1.662
5	101	4407	34352	7824	311	1.37	1.560
6	101	7155	32618	12585	338	2.42	1.700
7	101	9512	31246	16866	491	4.67	2.147
Total	NA	27484	111470	268461	NA	11.27	NA
Average	NA	3926.29	15924.29	38351.57	NA	1.61	2.15

Table 10: Firms in the portfolio of Guarantee Fund,traded in RMS – part 2

Round number	Number of firms for which				Value of portfolio per share
	Demand > 0	Supply > 0	Number of trades > 0	Demand $>$ supply	
Units	(number)	(number)	(number)	(number)	(Kc)
1	9	10	11	12	13
1	43	101	40	1	921
2	35	95	33	4	617
3	47	95	46	8	437
4	60	94	56	33	413
5	86	93	83	46	387
6	87	96	84	51	422
7	88	98	87	47	533
Total	446	672	429	190	NA
Average	63.71	96.00	61.29	27.14	NA

Source: Database of RMS

The relative quality of the portfolio of the Guarantee Fund could also be evaluated by the comparison of this portfolio with the data for the RMS as a whole. These data are given in Table 11.

2.2 PSE

PSE started to operate already in the middle of 1992, but at that time it covered shares of only a few firms. For the evaluation of the portfolio of the Guarantee Fund we have considered only the last 29 trading rounds in 1993. This covers the time period from July 13, 1993 to December 16, 1993. We label these rounds by ordinal numbers 1-29 in Tables 12 and 13.

Considering that the time period between two rounds of RMS is longer than the time period between two rounds of PSE, we use in the case of PSE not only the definition of the portfolio value as given by H(1) in the equation (1), but we also use an alternative definition. The alternative valuation, labeled as H(2), is obtained by using formula (1) with p_i defined by the following way:

1. If the quoted price for a given share is given, this price is used as p_i.

2. If there is no quoted price for a given share in a given round, we use the nearest previous or following quoted price of the given share.

3. If the time distance of the nearest previous and following quoted price is the same, we use the quoted price from the previous round.

4. If the nearest quoted price is farther than five rounds, we define $p_i = 0$.

The explanatory values of the first nine rounds which cover the period up to the start of the trading on RMS is quite restricted because the volume of trade was very low.

As opposed to the RMS, the PSE does not release the estimate of the price of the share for all firms in each round. This means that the estimated value H(1) of the portfolio

Table 11: All firms traded in RMS

Round number	Number of firms	Number of traded shares	Demand for shares	Supply of shares	Average price of share	Volume of trade
Units	(number)	(number)	(number)	(number)	(Kc)	(mil. Kc)
1	2	3	4	5	6	7
1	998	95778	254930	1995834	401	38.41
2	988	395265	624676	1121942	639	252.57
3	1000	1458246	1764618	1643359	722	1052.85
4	1012	958252	1501093	1072602	701	671.73
5	1034	767626	1356184	912677	664	509.70
6	1061	231643	986615	520298	341	78.99
7	1084	352790	1850423	739028	482	170.04
Total	NA	4259600	8338539	8005740	NA	2774.31
Average	NA	608514	1191220	1143677	NA	396.33

Round number	Number of firms for which			
	Demand > 0	Supply > 0	Number of trades > 0	Demand $>$ supply
Units	(number)	(number)	(number)	(number)
1	9	10	11	12
1	463	977	432	37
2	477	907	446	111
3	512	884	471	186
4	656	873	594	379
5	785	888	727	500
6	820	939	762	493
7	894	987	856	556
Total	4607	6455	4288	2262
Average	658	922	613	323

Source: Database of RMS

in the first half of considered rounds is based on a very small set of firms. This leads to an extremely low value H(1), under 1 bil Kc. Similarly, the number of firms used for the computation of an alternative value H(2) is quite low in these first rounds.

The tradebility of the portfolio of the Guarantee Fund is described in Table 13, which provides the number of firms in this portfolio according to their trading status in each round.

The possible states of the trading status, as determined by the operating rules of PSE, are described in the following paragraphs:

Perfect equilibrium means that the number of shares supplied and demanded is equal.

Local oversupply means, that the number of shares supplied is bigger than the number of shares demanded. The resulting price computed according to the algorithms used by PSE is, in this case, inside the allowed range.

Global oversupply means that the number of shares supplied is bigger than the number of shares demanded and that the resulting price computed by PSE algorithms is outside the allowed range. In this case, the automated trading system determines price on the border of the allowed range and the trades are realized with the appropriate reduction of the amounts of demanded and supplied shares.

Total oversupply means that the number of shares supplied is bigger than the number of shares demanded and that the resulting price is so far out of the allowed range that no trades are realized.

Local, global and total overdemands are defined symmetrically.

The market status nonquoted means that there was no demand or no supply or that the offers and bids were so different that the prices on the demand and supply sides do not overlap in any single case.

The results given in the Table 12 show that the value of the portfolio of the Guarantee Fund based on the trading on the PSE was in the range from 2.07 bil. Kc to 2.50 bil. Kc. The higher value achieved at PSE corresponds to the generally higher price level at PSE

Table 12: The results of portfolio of Guarantee Fund achieved on PSE

Round number	Number of firms	Number of traded shares	Value of portfolio H(1)	Average price of share	Number of quoted firms	Number of traded firms	Value of portfolio H(2)	Number of firms used to calculate H(2)
Units	(number)	(number)	(bil.Kc)	(number)	(number)	(number)	(bil.Kc)	(number)
1	99	0	1.683	0	8	0	2.271	27
2	99	4	0.470	1200	4	1	1.516	28
3	99	2	0.760	750	7	1	1.433	31
4	99	43	0.712	681	11	2	1.126	29
5	99	1	0.212	5000	8	1	1.037	30
6	99	40	0.428	423	10	4	1.008	31
7	99	11	0.182	335	7	3	1.008	35
8	99	19	0.327	308	13	4	1.118	42
9	99	79	0.420	287	12	8	1.226	50
10	100	216	0.671	283	15	9	1.329	56
11	100	203	0.664	228	19	9	1.343	58
12	100	263	0.865	430	25	18	1.378	57
13	100	256	1.112	461	32	23	1.775	59
14	100	406	1.047	457	36	15	1.721	59
15	97	281	1.055	538	39	17	1.790	63
16	100	727	1.329	383	39	14	1.914	65
17	100	162	1.185	444	28	14	2.113	72
18	100	883	1.716	490	33	17	2.265	73
19	100	774	1.573	740	31	20	2.250	75
20	100	857	1.820	1071	36	25	2.299	77
21	100	219	1.241	564	21	11	2.378	80
22	100	1155	1.983	996	43	24	2.393	82
23	100	549	1.557	1205	29	21	2.288	83
24	100	1447	1.942	810	47	25	2.248	83
25	100	853	1.831	774	41	26	2.184	83
26	100	944	1.881	886	42	20	2.209	83
27	100	831	1.856	1069	43	30	2.214	83
28	100	1357	2.100	1146	52	31	2.337	83
29	100	703	2.074	1206	41	24	2.496	83
Total	NA	13285	NA	NA	772	417	NA	1760
Average	NA	458.10	1.196	NA	26.62	14.38	1.82	60.69

Source: Database of PSE.

as compared to RMS.

3 Conclusions

The financial support for Czech agriculture during early transition was provided through several institutions. The State Fund for Market Regulation (SFMR) is a government run agency, which buys certain agricultural products under certain conditions, stores them (or arranges for their storage by contract with some commercial enterprises) and again sells these products in domestic or foreign markets. In this way, SFMR is engaged in the creation and implementation of both domestic and foreign agricultural trade policies of the Czech government.

SFMR was designed to work both as a market stabilizer and a farmers' support program. During the first years of its existence, its programs involved many agricultural commodities. The gradual tendency was to narrow its focus, so that in 1995 it was only engaged in the trade of cereals and milk products. For farmers the forward buying of agricultural commodities by SFMR served as a very important source of money paid in advance under favourable conditions.

The subsidies provided under the subsidy programs of the Czech Ministry of Agriculture were always targeting some special goals. Under these programs, in the majority of cases, the farmers had to formally apply for a given program and the Ministry of Agriculture had no obligation to accept the application. The support included a very wide array of subsidized activities ranging from the support of beef pastures to the creation of information systems for agriculture. The methods of support were also varied from direct monetary payments to direct loans or subsidies for interest payments on ordinary commercial loans.

From the beginning of 1994, this system was supplemented by the Support and Guarantee Fund for Farmers and Forestry (further abbreviated as the Guarantee Fund), which came to be viewed as the single most important instrument of government support for

agriculture. It financial backing was provided by a portfolio of privatized food enterprises. The value of this portfolio was estimated in this paper.

Table 13: Number of firms in the portfolio of Guarantee Fund according to the status of the market achieved

Round number	Perfect equi-librium	Local over-supply	Local over-demand	Global over-supply	Global over-demand	Total ove-supply	Total over-demand	Non-quoted
1	0	0	0	0	0	8	0	91
2	0	0	1	0	0	3	0	95
3	0	1	0	0	0	6	0	92
4	1	0	1	0	0	9	0	88
5	1	0	0	0	0	7	0	91
6	1	1	1	0	1	5	1	89
7	0	1	1	1	0	3	1	92
8	1	1	2	0	0	7	2	86
9	1	3	2	0	2	3	1	87
10	1	1	6	0	1	4	2	85
11	1	1	3	1	3	6	4	81
12	0	0	11	4	3	7	0	75
13	3	7	10	1	2	2	7	68
14	1	6	5	0	3	15	6	64
15	2	3	7	2	3	17	5	58
16	1	2	6	2	3	10	15	61
17	1	0	10	2	1	10	4	72
18	1	4	7	1	4	3	13	67
19	0	6	8	0	6	7	4	69
20	2	9	10	2	2	6	5	64
21	0	1	6	2	2	6	4	79
22	1	7	9	5	2	11	8	57
23	0	6	8	5	2	6	2	71
24	0	5	13	1	6	18	4	53
25	0	4	14	5	3	11	4	59
26	1	4	11	1	3	12	10	58
27	1	9	13	3	4	8	5	57
28	0	7	14	3	7	7	14	48
29	1	4	15	1	3	4	13	59
Total	22	93	194	42	66	221	134	2116
Average	0.76	3.21	6.69	1.45	2.28	7.62	4.62	72.97

Source: Database of PSE.

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