

Diversification of individual farms in Slovakia with regard to production use patterns and level of income

Diferenciácia podnikov samostatne hospodáriacich roľníkov na Slovensku podľa účelu výroby a výšky príjmu

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Abstract: During the years of transition to market economy, a variety of farming types has evolved in Slovakia. Corporate farming is still pursued on about 80 per cent of the total agricultural land area, but a gradual increase of individual farms can be observed. A large portion of the registered individual farms is producing both for the market and for the self-supply of households, but the importance of specialised commercial farms has been growing during the recent years. Their share in the total number of registered individual farms can be estimated as 25 per cent and they specialise as a rule on cash crop products. The average production area is 130 hectares, but income differentiation is wide-ranging within this group of farms. The lowest income strata (which represent about 50 per cent of these farms) receive eight times less income, than the highest one – represented by less than 2 per cent of cases.

Key words: farm restructuring, individual farm, product specialisation, production use, income, scale of operation

Abstrakt: Počas transformačného obdobia sa na Slovensku vytvorili rozmanité typy poľnohospodárskeho podnikania. Ešte vždy prevládajú právnické osoby, ktoré hospodária približne na 80 percentách poľnohospodárskej pôdy, avšak postupne sa zvyšuje počet samostatne hospodáriacich roľníkov. Prevažujúci podiel registrovaných samostatne hospodáriacich roľníkov vyrába tak pre trh ako aj pre samozásobenie domácnosti, avšak v poslednom období rastie význam špecializovaných, na trhovú produkciu orientovaných fariem. Ich podiel na celkovom počte registrovaných samostatne hospodáriacich roľníkov je približne 25 percent, pričom sa zameriavajú prevažne na trhovú rastlinnú produkciu. Tieto farmy obhospodarujú priemerne 130 hektárov, ale rozdiely v objeme dosahovaných príjmov sú veľké. Skupina s najnižšími príjmami, ktorá predstavuje 50 percent všetkých sledovaných hospodárstiev dosahuje osemkrát nižší objem príjmov na farmu ako skupina s najvyššími príjmami (2 % sledovaných fariem).

Kľúčové slová: reštrukturalizácia, samostatne hospodáriaci roľník, špecializácia, účel výroby, príjem, veľkosť podniku

INTRODUCTION

Reforms, which started in Central-Eastern European transition countries more than ten years ago, led, among other revolutionary changes, to a substantial re-building of farming structures. At the simplest, this move could be described as having been a process of dismantling large-scale farms, organised either as the kolkhoz-type co-operatives or state owned farms, and their replacement by ventures based on private ownership and free business in the market type of economy. At the current stage of this process in countries concerned, we are witnessing a variety of legal and socio-economic types of farms. Within this range, individual transition countries show a different pattern of the quantitative distribution of farm types. In some countries, legal bodies such as business companies prevail, in other countries, the largest share of production factors is owned or operated by individual farms. Slovakia belongs to the first group, with more than 80 per cent of land farmed by corporate farms

in 2002. The remaining share of land either serves supplying subsistence needs of rural households or is farmed by individual farms.

OBJECTIVES AND METHODOLOGY

The aim of this paper is presenting and analysing several characteristics of individual farms in Slovakia, notably of those which may be considered to be commercial, that means in a certain extend delivering their produce to markets. The focus of analysis is on the product orientation of individual farms, the pattern of production use, which may be either self-consumption or marketing, and on profitability of these farms.

The official Farm Census 2001 revealed (Structural census... 2002), that the total acreage of registered individual farms which met the Census criteria accounted for 191 998 hectares (8 per cent of the total UAA) and the average area per holding for 36 hectares UAA. Thus, the

number of these farms reached 5 661, by about 2 000 less than the previous Census counted up in 1995.

With certain simplification, these farms may be considered commercial. The hitherto available Census data do not allow for a more precise discrimination between commercial and subsistence farms by using indicators like share of produce marketed, sales revenue etc. In general, census data do not comprise any direct indication on farm revenue, production cost or expenditure, income by sources or similar economic information. A certain economic indication can possibly be derived from the data on physical production and factor use (fixed capital, labour, land) in the later stages of data processing.

The “individualisation” process, what means the elimination of corporate forms of farming from the farm structure and the domination of “family” farms in structural terms is the “holy cow” of social scientists who study the farm sector transformation in the CEECs. Slovakia is situated at the bottom of ranking tables that examine the degree or rate of “individualisation” (Mathijs, Swinnen 2000). “Individualisation” is considered to be the indicator of the completeness of the economic reform in agriculture. Therefore, policy recommendations prevalingly emphasise the need to accelerate the destruction of large corporate farms and to enhance the generation of individual farms (Lerman 2002).

In spite of the fact, that in quantitative terms individual farming is quite underdeveloped in Slovakia, in qualitative terms the emerging individual farms represent a pattern which deviates in many aspects from what has been understood yet under the concept of family farm. Especially in terms of productivity, efficiency and competitiveness, many individual farms in Slovakia seem to surpass their counterparts in the EU countries, what may mostly be attributed to the scale of operations and different employment patterns (family versus hired labour).

In this paper, the focus will be on assessment of the level of commerciality of individual farms (measured by the share of marketed output in total production), and the income distribution within the group of individual farmers. Several sample surveys have served as sources of data. Notably, three sources provided useful data: the annual Farm Survey of the Ministry of Agriculture (so called “Information sheets”), the national FADN data and finally the sampling data collected by the project team of the EU Phare ACE P97-8158-R “Micro-Economic Analysis of Farm Restructuring in Central and Eastern Europe”¹. The MoA Farm Survey database comprises data collected from 840 individual farms, the FADN database handles data attained from 240 farms.

FINDINGS AND DISCUSSION

Scale of operations

Individual holdings as registered by the below statistics represent a very broad range of farm types, from hobby-gardening through various sorts of households’ subsistence plots up to highly commercial farms based on rented land and hired labour (Table 1).

From the above mentioned data, which is based on land registers maintained by the Cadaster Offices, the unequivocal conclusion may be drawn that the range (in terms of hectares) of individual farming has been growing during the observed period. Also we can see, that there has been a distinctive divergence in the evolution of the smallest farms on one side and the largest holdings on the other.

While the number, acreage and average scale of the smallest holdings have been more or less stagnating, the number, acreage and average scale of holdings over 30

Table 1. Individual holdings (larger then 0.1 hectares) by size of land used

	Number of holdings			Utilised agricultural area			Average size of holding		
	1993	1998	2001	1993	1998	2001	1993	1998	2001
All holdings	294 730	316 417	331 990	99 825	124 342	147 666	0.34	0.39	0.44
Size categories in hectares									
From 0.1 to 0.5	291 164	280 949	295 342	78 388	59 543	61 982	0.27	0.21	0.21
Over 0.5 to 3.0			34 057			30 373			0.89
Over 0.5 to 5.0	2 767	34 454		8 801	33 933				0.89
Over 3.0 to 5.0			1 270			4 882			3.84
Over 5.0 to 10.0	608	646	706	5 362	4 330	4 712	8.82	6.70	6.67
Over 10.0 to 30.0	132	205	330	1 721	3 227	5 254	13.04	15.74	15.92
Over 30.0 to 100.0	44	97	164	1 857	4 968	9 105	42.20	51.22	55.52
Larger than 100.0	15	66	121	3 696	18 341	31 358	246.40	277.89	259.16

Source: Statistical Yearbook on Land. Board of Geodesy and Cadaster of the Slovak Republic, Bratislava 1993, 1998, 2001

¹ Several findings attained by this project team have already been published (Mathijs 2002; Doucha, Divila, Juřica, Matalová 2002; Bielek, Pokrivčák, Jančíková, Beňo 2002).

Table 2. Size distribution of individual farms, year 2000 (Commercial farms only)

Farm size	Number	Average size (hectares)
0 to 5 hectares	11	2.27
5–10 hectares	18	7.94
10–30 hectares	174	20.14
30–50 hectares	136	39.24
50–100 hectares	205	71.63
Over 100 hectares	301	286.83
Total	845	130.22

Source: Farm Survey of MoA, 2001

hectares have been steadily increasing during the observed period. Nevertheless, there are many empirical indications, that in reality, the scale and the share of the largest farms in the total acreage of UAA are much higher than the figures presented by the above statistics allow to estimate. The reason for this fact is that the Cadaster records manage to register land use transfers with notable delays in time only.

This fact may also explain the significant deviations in firm sizes reported by different sources. For example, the Farm Survey of the MoA is reporting a much higher number of farms sized over 100 hectares, than the above statistics. The size distribution of individual farms, according to the MoA data, was in 2000 as displayed in the Table 2.

A significant share of commercial individual farms (which are covered by the Farm Surveys organised by the Ministry of Agriculture) operate farms of over one hundred hectares. In this size category, the average size of operated land accounts for near to 300 hectares.

The above information about the evolution of the number and size of individual farms during the period after 1993 is showing that the number and share in the total land use of very small (household) farms decreased. The number and share of farms sized over 10 hectares was growing, but a remarkable rise in number of holdings operating 100 and more hectares cannot be overseen. This allows to assume, that farm restructuring in Slovakia is heading within its main stream towards establishment of individual farms which are market-oriented and commercial rather than of self-subsistence nature.

Use of production

We call farms “commercial” if they market their total output or a significant share of it. If we say, that the main stream of restructuring is towards commercial farms, it does not mean, that commercial farms represent the majority of individual holdings or the largest share of land farmed by individuals. Also, the scale of operations in terms of land held is only a proxy indicator, which may be used to express the presence of commercial use of production, indeed. Very often, small holdings may be pretty commercial, when producing and marketing e.g. vegetables or fur animals. To get more insight into this field, we analysed shares of produced and marketed products within the entire range of individual farms.

In this section, data from the PHARE ACE sample survey are used. The sample comprises data collected from 412 registered individual farms in Slovakia’s two regions. More information on the sampling procedure is to be found in articles published in this journal earlier (Pokrivčák, Bielik 2001).

According to the survey data, there is a great diversity among individual commodities produced by individual farmers in respect to their being a marketed good. Some

Table 3. Share of marketed produce by individual farms by commodity item

Item	Share of farm households with		Average share of marketed produce	Share of cases with this type of produce (relevant cases) per cent of total sample (412)
	zero marketing (per cent of relevant cases)	total marketing (100 per cent of output)		
Beef	42.5	26.6	50.4	22.8
Mutton and lamb	22.2	51.4	74.0	17.4
Pork	70.0	4.3	22.6	45.4
Poultry meat	80.4	4.5	15.2	43.4
Cow milk	63.9	13.9	29.4	26.0
Cheese	65.3	17.3	29.5	23.8
Eggs	82.3	4.8	14.6	45.4
Fruit	62.6	8.4	28.0	46.1
Vegetables	54.8	3.8	37.7	51.0
Potatoes	71.7	2.8	22.2	52.4

Source: PHARE-ACE Project, 2001

product items are typical self-supply goods; other items are prevalingly marketed. Also, there is a high diversity among farmers in respect to the commodity scope of production. Potatoes and vegetable production are the most common activities (observed at more than 50 per cent of cases) – Table 3.

It is interesting to learn, that the highest marketing ratio (share of produce that is marketed) is being observed in the case of sheep production, which is, on the other hand, produced only in a limited range of individual farms. It may also be explained by the composition of the sample, in which farmers from Southern lowland regions prevail².

The second highest marketing ratio may be observed in the case of beef, followed by vegetable production. An explicitly commercial production orientation can be identified only at a small portion of registered farms, mostly among those, which produce beef, mutton and perhaps milk and cheese. Potatoes seem to be produced only for self-consumption in the large majority of farms. The same applies to the production of poultry, and indeed, that of pork.

We suggest, that the so-called cash crop products (wheat, sugar beet, oilseeds) grown by individual farms have a high marketing ratio, higher than the ratios for commodities shown in the table. E.g. for wheat, the survey data show a 98 per cent share of marketed goods in the total produce. Across all plant production, approximately 70 per cent of produced goods are marketed. The animal production run by individual farmers is less market-oriented, showing only 32.5 percentage share.

All that has been mentioned above indicates that individual farmers focus first of all on market deliveries of cash crop products. Livestock production (with few exceptions such as sheep) is consumed by the farm household itself to a high extent (Table 4).

The combination of market-oriented sectors with those serving household consumption within one farm does not seem to be a quite wide-spread feature. If there were an explicitly market oriented farm, this would be most probably running a cash crop production, but not rearing any animals. According to the survey outcomes, close to the half (42 per cent) of those who were selling their plant product did not rear any livestock. On the other hand, more than fifty per cent of those who were selling animal products were selling also plant products. This combi-

nation of market enterprises, which can be considered to be mixed farms, is not very frequent (only 16 per cent of the total sample). Market specialisation on animal products is pursued only by ten from one hundred farmers. The share of farms, which do not sell either livestock or plant products and pursue agriculture only in order to provide for own household's supply, is about 20 per cent of all registered farms.

From all this, the conclusion can be drawn, that for the commercial individual farm, a high degree of specialisation is typical. The specialisation on cash-crop products prevails. The mixed farm is rather a pattern, which serves the needs of the households primarily, and the marketed share of output is relatively low.

Income sources

In this section, income sources of farming households are examined. Non-farming income may have a significant importance for farming households, since – as we have seen in the the previous section – about 20 per cent of registered farms do not generate any monetary income from farming. In reality, a variety of complementary income sources serves the needs of farming families.

From the data shown in the above Table 5, we may draw several conclusions:

- The importance of income sources for farming households can be ranked as follows: (1) Farming, (2) Paid labour (3) Social benefits (pensions).
- Governmental subsidies are not of a very high importance, either by the share of their recipients or by the individual assessment of their importance.
- For that who are concerned, the old age pension has a relatively high importance, higher than the importance of wages for wage earners. Due to the fact, that close to 50 per cent of individual farmers are beneficiaries of old age pensions, social receipts are of utmost importance for the entire population of individual farmers.
- The farming households' income is leaning on three pillars for the majority of the surveyed farms. About two thirds of farming households are of part time character.
- Contract work (services delivered to other farmers) is not very common among individual farmers represented in the sample.

Table 4. Market orientation of individual farms

Commodity sector	Share of farms running this enterprise (per cent)	Average share of marketed output per cent of total production	Share of farms with zero market output per cent of farms running this enterprise	Share of farms which market all produce per cent of farms running this enterprise
Plant production	57.3	70.0	16.5	25.4
Livestock production	27.7	27.7	51.8	6.1

Source: PHARE-ACE Project, 2001

² Sheep is prevalingly reared in northern mountain regions

Table 5. Self-assessment of income sources by farming households (Survey data, number of cases)

Income from	Importance of the following sources of income:					
	high (3)	medium (2)	low (1)	cases total	share in sample (412) per cent	average score
Farming	180	127	39	346	84	2.475
Contract work	4	21	13	38	7	1.7631
Wages and salaries	111	67	22	200	48	2.445
Non-agricultural activities	13	16	8	37	9	2.135
Old age pension	106	45	18	169	41	2.521
Rent	4	35	19	58	14	1.741
Dividends and interests	1	5	15	21	5	1.333
Governmental subsidies	8	38	49	95	23	1.568

Source: PHARE-ACE Project 2001

Income from farming

This section is based on data of the MoA Farm Surveys, which allow analysing economic performance of corporate and also individual farms in Slovakia. In order to give a picture about the mean values of basic income and income component indicators, we compiled the Table 6.

The share of farms that closed their accounts in black was 77 per cent of the total sample in 2000. During the three years from 1997 to 1999, the share of those moved down to about 65 per cent of the total number of family farms. If we neglected the subsidy-based part of revenues, the share of profit-making farms would have been only between 40 and 50 per cent. In 2000, a completely different situation occurred. A severe draught reduced

farm revenues significantly and without subsidies, only 15 per cent of all family farms would have had attained profit.

In order to evaluate the level of the above mentioned income, as a yardstick, the average wage in the national economy could be taken. This amounted to 11 430 SKK monthly, or to 137 thousand SKK per year in 2000. The income of farmers had been outstripping the earnings of wage earners by approximately 40 per cent. This average gain is not too high, if taking into account the average size of farms in the sample, which accounted for 131 hectares in the year 2000.

It also should not be neglected, that if there were no subsidies, the average farm would have to close its accounts in red in each of the observed years.

Table 6. Average farm income between 1997 and 2000 (in thousand SKK, per family farm)

	1997	1998	1999	2000
Total receipts (incl. subsidies)	2 071	2 350	2 563	2 939
Total receipts (without subsidies)	1 820	2 030	2 240	2 450
Of that:				
– from agriculture	1 449	1 625	1 719	1 749
– plant production	1 059	1 215	1 310	1 322
– livestock production	300	322	291	330
Other receipts	325	313	437	670
Subsidies to current operations	251	321	323	489
Total expenditures	1 908	2 162	2 370	2 908
Gross income	163	188	193	31
Average scale (hectares UAA)	89	112	117	131

Source: MoA Farm Surveys, RIAFE

Income distribution

It is important to assess, to which extent the differentiation among individual farms is present in respect to income attained. To get an idea on this, we ranked individual farm data according to their value and sorted them into five groups. To avoid calculation problems with minus values (there has been a relatively high number of loss-making ventures in the sample), we substituted the income indicator by the indicator of receipts (sales revenue). For each farm, the value of receipts per active household member was reckoned. Table 7 shows the distribution of farms according to their value of receipts per active household member, within pentils.

With some data manipulation (exclusion of marginal cases at both ends of the income scale), we gained insight into “income” differentiation of family farms.

The highest income stratum is occupied by two per cent of farms and one household member may cash in average (median) eight times more money than a household member from the lowest stratum. The lowest stratum is occupied by 60 per cent of farms and the value of receipts per head accounts for something over 400 thou-

Table 7. Individual farms by income, year 2000

	Farm number	Median farm income (SKK)	Median size (hectare)
Marginal cases (excluded)	21	90 153	17.9
Farms with the smallest per capita income	477	438 608	45.0
Farms with small per capita income	210	1 089 964	89.4
Farms with middle per capita income	69	1 851 219	130.0
Farms with large per capita income	32	2 630 199	145.4
Farms households with the largest per capita incomes	15	3 380 520	187.6
Marginal cases (excluded)	21	4 434 883	161.2
Number of farms	845		

Source: Farm Survey of MoA, 2001

The indicator "income" has been replaced by "farm receipts" to avoid negative income figures. Approx. 30 per cent of surveyed farms report a negative income (according to accountancy data). Values in Slovak currency

sand SKK. The average scale of operations with the lowest income is 45 hectares and that of the highest income stratum is 160 hectares.

These findings point at a very high differentiation among Slovak individual farms in respect to the amount of income obtained from farming. Even if we substituted "income" by "receipts" for analytical purposes, the wide scope of values shown in the table indicates the variation of profit that may be earned by individual farmers in Slovakia. The gains from farming depend on the scale of operations. As the data show, there is a very wide span between the income of the smallest and the largest farms. Besides the scale of operations, the size of income is influenced also by other factors such as production orientation and the share of market deliveries in the total farm output. The latter widely varies within the population of individual farms. Especially in the smallest farms, the share of produce consumed on farm is high, what is a factor depressing the farm's monetary income.

CONCLUSION

Individual farming has not become the majority type of farming in terms of the share in the total agricultural area used during the years of transition. However, a significant group of commercial farms operated by individuals has emerged. Their distinctive feature is a high degree of specialisation and use of hired labour. In quantitative terms, these farms make up for 20 per cent of all registered individual farms, but operate a much larger share of land. Their number has been continuously increasing during the observed period between 1993 and 2001. The income of these commercial farms does match in average the mean income of wage earners in the national economy (outstripping it by about 40 per cent), but its distribution among individual farms is very differentiated. The annual income of the lowest income stratum (operating

45 hectares in average) is eight times lower than that of the highest income stratum (operating 190 hectares in average).

As for the total population of registered farmers, the income of their majority relies on three pillars: income from farming, income from paid work and social incomes. Close to the half of all registered farmers are beneficiaries of old age pensions.

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