The Agricultural Sector of Slovakia on the Eve of EU Accession

Csaba Csaki, Zvi Lerman, Antonio Nucifora, and Gejza Blaas1

Abstract: A team of economists surveys Slovakia’s agriculture, which continues to exhibit mediocre performance on the eve of that country’s accession to the European Union. The paper, utilizing national statistics as well as financial data collected from 1,200 corporate and 850 individual farms, evaluates the country’s current agricultural policies, which emphasize self-sufficiency and state intervention, reflecting a weak political commitment to market-based agriculture. Also discussed is the limited progress in land privatization and farm restructuring, the preservation of inefficient and unprofitable large farms, as well as related rural impediments such as inadequate transport infrastructure and a shortage of skilled labor. Journal of Economic Literature, Classification Numbers: Q15, Q18, Q24. 6 figures, 2 tables, 17 references.

This article presents an assessment of agricultural and rural development in the Slovak Republic on the eve of EU accession.2 It is based on a wide range of primary sources, both unpublished and publicly available, that have been studied by the authors during their field work in Slovakia in 2002. Following a brief review of the recent performance of the agricultural sector and the status of policy reforms, the paper examines the progress of transition, covering such major issues as progress in land privatization and farm restructuring, performance of different organizational forms of farms, and major obstacles to rural development. The key findings of the study are summarized in the context of critical policy issues to EU accession.

THE RECENT PERFORMANCE OF AGRICULTURE

Slovakia was part of the federative republic of Czechoslovakia from its creation in 1918 until January 1, 1993. Prior to World War II, Czechoslovakia was one of the most

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2Voters in Slovakia passed a referendum on joining the European Union on May 17, 2003. Despite a low turnout reported to be ca. 52 percent (a 50 percent turnout was required for the referendum results to be binding), over 90 percent of those casting a ballot supported accession (New York Times, May 18, 2003, p. YT8). Actual accession is scheduled for 2004—Ed., EGE.
industrialized countries in central Europe. Agriculture played only a marginal role in the Czech economy, but its economic significance was far greater in Slovakia. Between the two world wars, Slovak agriculture was solidly grounded in private ownership and private enterprise, but never achieved the yields and livestock productivity levels of Czech farms. After World War II, Slovak farmers were collectivized in accord with the principles of central planning, and agriculture suffered from the shortcomings of the socialist agricultural model (e.g., Cook, 1992; Kornai, 1992; Deininger, 1993; Lerman et al., 2002). Quantity of output was the major goal, while quality and efficiency played a secondary role at best. The transition to the market that began in 1989 has brought significant change, but measurable improvements in performance and competitiveness are still limited.

Agriculture is widespread in three of Slovakia’s four natural regions: the West Slovak Region (with the national capital of Bratislava as its administrative center), the Central Slovak Region (extending south from the Tatra Mountains to the Hungarian border), and the East Slovak Region (with Košice as its capital). The country’s richest soils, the black chernozems, occur in the southwest. Only the Tatra Region on the Polish border, with its rugged alpine relief, is generally unsuitable for agriculture. Figure 1 illustrates the general pattern, depicting the percentage employed in agriculture in each district.

Crop farming and horticulture, including cereal grains, oilseed, sugar beets, vegetables, and vineyards, is concentrated in the agriculturally rich southwest and extends east through the southern lowlands along the border with Hungary. This is the warmest part of the country with relatively low precipitation levels. The mountainous areas along the northern border are characterized by elevations of more than 600 meters (2,000 feet) above sea level, with low temperatures, high precipitation, and poor soils. The pastures and meadows in the mountainous belt support only cattle and sheep as the main agricultural activities. The transition belt between the mountainous north and the fertile south is “potato country”: its medium-quality soils and moderate temperatures and precipitation levels are generally suitable for all crops that do not require particularly warm weather.
Slovakia’s easterly position gives it a more continental climate than that of the Czech Republic. The growing season averages about 200 days in the south and less than half that in the mountains. Annual precipitation ranges from 22 inches (570 millimeters) in the Danube plains to more than 43 inches in windward mountain valleys. Maximum precipitation falls in July, while the minimum is in January.4

Approximately two-fifths of Slovakia is still forested, although agriculture and timber cutting have significantly reduced the original forest growth. The country’s remaining forest cover is most extensive in the mountainous districts. Largely because of its rugged terrain, Slovakia has a relatively low density of settlement. Rural settlements with up to several hundred inhabitants tend to prevail except in the more heavily urbanized southwest.5

The role of agriculture in the Slovak economy shows a persistent long-term decline, both in terms of its share of GDP and in total employment (Fig. 2A). Although agricultural output increased (as measured in real values) throughout the socialist period, it was outstripped by growth in other sectors, leading to the gradual marginalization of Slovak agriculture as evident today. Immediately after 1989, both GDP and agricultural output dropped sharply due to the temporary disruptions caused by the onset of transition (Fig. 2B). However, GDP began an impressive recovery in 1992–1993, while agricultural product (as measured in the system of national accounts) did not rebound after a substantially larger drop: the decline in agriculture has been arrested, but agricultural product remains rather steadily at ca. 60 percent of its 1990 level (Fig. 2B).

The decline in agricultural output since 1989 has been accompanied by an even greater decline in agricultural employment, resulting in an impressive increase in agricultural labor productivity.6 That increase is not an outcome of technological improvements, but is entirely due to the shrinkage of the labor pool, as some agricultural workers move to alternative jobs.

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3Mean annual temperatures range from 51° F (11° C) in the Danube lowlands to 25° F (-4° C) in the High Tatras.
4The higher peaks maintain snow cover into the summer months.
5The highest concentration of population is found on the Danube plains.
6Agricultural labor productivity increased at an annual rate of 1.2 percent between 1989 and 2000 (authors’ calculations based on agricultural output and agricultural labor data from Statistical Yearbook, 2002).
in other sectors of the growing economy and some leave agriculture due to age and other natural factors. These trends reduced the levels of underutilization of agricultural labor that characterized agriculture in the pre-1989 socialist era and contributed to the observed productivity increases. Nevertheless, increases in agricultural labor productivity lag behind those in overall labor productivity in the economy, where GDP growth combined with decreasing labor produced fairly high rates of change in labor productivity (3.4 percent per year for 1989–2000).7

Livestock productivity and crop yields are low by regional standards. Sharp declines in the livestock herd (from 2 million standard head in 1990 to 1 million in 1999) led to a significant recovery in productivity, and livestock output per standard animal increased in 1999–2001 to roughly 120 percent of the 1990 level.8 On the other hand, the productivity of land as measured by the value of crop output per hectare of arable (or sown) land declined sharply relative to 1990, stabilizing after 1993 at two-thirds of the 1990 level.9 The crop yields and the livestock production measures in the Slovak Republic are between 40 percent and 70 percent of EU levels (41 percent for potatoes, 70 percent for wheat, and 73 percent for milk).10 The yields achieved by Slovak agriculture are lower not only compared with the EU countries, but also relative to the Czech Republic, as well as Hungary, Slovenia, and Poland (Fig. 3). Slovakia has an aggregated yield score of 1.3 on a scale of 1 (lowest yields) to 7 (highest yields), ranking higher than Romania, but lower than all other countries.

In sum, the performance of Slovakia’s agricultural sector over the past decade has not been impressive, with recovery being much slower than in other sectors of the economy, stagnating at around 60 percent of the pre-transition level. Reflecting this lack of

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7Prior to 1989, the productivity of labor increased at an annual rate of about 3 percent per year both for agriculture and for the economy as a whole.

8Information on the size of the livestock herd is derived from authors’ calculations based on the number of animals by species in Statistical Yearbook (2002); information on livestock productivity is derived from authors’ calculations based on the value of livestock production in Statistical Yearbook (2002).

9Information on the value of crops per hectare of sown land is derived from authors’ calculations based on data in Statistical Yearbook (2002).

10These yield comparisons, including those presented in Figure 3, are based on authors’ calculations from UN Food and Agricultural Organization on-line data (FAOSTAT) and information contained in various pages of the Slovak Ministry of Agriculture, Food, Forestry, and Water Management “Green Report” (MAFSR, 2001).
improvement, agricultural yields have not grown significantly in recent years, remaining low even by regional standards. In our view, the major causes of this poor performance of Slovak agriculture include conservative agricultural policies and an uncompleted transition agenda.

AGRICULTURAL POLICIES AND THE PROCESS OF REFORM

After the collapse of the socialist system at the end of 1989, the new federal government of Czechoslovakia introduced a program of wide-ranging economic reforms that began to be implemented in 1991. The program endeavored to create a market-oriented, internationally competitive agriculture based on the principles of private ownership of land and other agricultural assets. Slovakia, however, opted for more conservative policies than its Czech neighbor even before the dissolution of Czechoslovakia in 1993. The Slovak government, while formally advocating impartiality toward different forms of farm organization and endorsing market-oriented policies, in fact promulgated conservation of existing structures and limited the development of market mechanisms by practicing state paternalism (Bezemer, 2001). Moreover, the Slovak government adopted the rhetoric of self-sufficiency, which shaped agricultural policies by promoting intervention in favor of selected commodities and introducing distortions in agricultural markets.

After independence, the primary objective of the Slovak government was to arrest the decline of agriculture, which politicians and entrenched Ministry of Agriculture officials not surprisingly attributed to the liberal reform policies of the early 1990s. The declared objectives of agricultural policy in independent Slovakia have embraced state food security, economic stability, adequacy of agricultural income, balanced development of regions, improvement and protection of farmland, and preservation of agriculture in uncompetitive hilly areas. The means to achieve these goals included state financial support and significant government involvement in decisions relating to production.

While originally focused on providing protection to farmers from the upheavals of transition and price liberalization, the policy framework remains largely unchanged since the early 1990s. The main support instruments for agriculture include the following components: (1) direct payments to farmers, intended to support selected crops (on a per hectare basis), animal production (on a per head basis), and farming in less favorable areas, as well as to provide disaster compensation and assistance with charges for irrigation; (2) market price intervention, which involves “guaranteed” prices for selected commodities; (3) credit subsidies, which provide access to working-capital financing at preferential interest rates and investment grants for asset modernization and restructuring; and (4) tax concessions in the form of special tax exemptions to farmers operating as physical persons and tax refunds on diesel fuel used for farming. More recent instruments of government intervention include agro-environmental and rural development support schemes, which have been implemented since 1997 to encourage sustainability and protection of the environment, and financial support for general agricultural services, such as research, education, information dissemination, and marketing promotion. Among the various instruments of agricultural support, direct payments to farmers and commodity support through guaranteed prices accounted for more than 50 percent of total budget expenditure on agriculture in 2000 and 2001 (Fig. 4).11

An important feature of Slovakia’s agricultural support system is the clear bias against small farmers. Most of the farmer-related payments include requirements detailing a

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11Calculated by the authors on the basis of VUEPP’s database, showing the total budgetary expenditure of 300 million kronas for the year.
minimum size of operations, e.g., output values corresponding to five cows or five hectares of land, which favor relatively large farms. Small farmers benefit only from limited tax exemptions for individuals—a negligible component of the generally small tax relief scheme providing mainly for diesel fuel refunds.

Despite the profusion of agricultural support schemes, the share of support to agriculture and the food industry in the government budget has declined sharply since 1989 (Fig. 5).\textsuperscript{12} The decline in agricultural support is reflected in the decline of the Producer Support Estimate (PSE)\textsuperscript{13} in Slovak agriculture. The current level of PSE at below 20 percent (OECD, 2002) is comparable to that of Slovakia’s neighboring EU accession candidates (Poland, Czech Republic, Hungary); it is relatively low when compared to the EU and OECD averages (where it reaches 40 percent). As a percentage of GDP, however, Slovakia’s budget expenditures on agriculture are roughly double those of the EU and the large OECD economies (about 2 percent of GDP in Slovakia compared with 1 percent in the EU and OECD).

\textsuperscript{12}Calculated by the authors on the basis of VUEPP’s database (see above).
\textsuperscript{13}PSE is an aggregate measure of support that summarizes a variety of government policy measures in a single figure (OECD, 1987). It is calculated for a given year as the ratio of total transfers to producers from the budget to the value of production (including direct payments to producers and levies).
As a result of general macroeconomic reforms, the agricultural sector now operates in a macro-economic and trade environment with direct links to world markets. Yet the level of agricultural policy and institutional reforms accomplished in Slovakia is lower than in the frontrunner EU accession candidates. According to the World Bank agricultural policy rating system,\textsuperscript{14} Slovakia achieved a score of 8.2 in 2001, up from 7.4 in 1997 (Csaki and Nucifora, 2002). This constitutes significant progress in recent years, but Slovakia still lags behind the Czech Republic, Hungary, Slovenia, Estonia, and Latvia, all of which have policy scores of 9 and higher. It is comparable in its reform achievements to Poland, Bulgaria, and Lithuania, and is far ahead of the CIS countries, where agricultural policy reforms score only slightly higher than 5 (ibid.).

**LAND TENURE REFORM**

Like most countries in Central and Eastern Europe, Slovakia inherited from the socialist era a land tenure system based on collective farms cultivating a mixture of private and state-owned land. Transition to the market had to address two land-related issues: restructuring of the traditional collective farms into market-compliant operations\textsuperscript{15} and privatization of state-owned agricultural land (at least in part).

Slovakia, not unlike its neighbors, chose restitution to former owners as the method for privatizing land. State-owned land—about 30 percent of all agricultural land in 1989—consisted of two distinct components. The first comprised land that had been expropriated from “enemies of the state” (e.g., Nazi collaborators, ethnic Germans) immediately after World War II in 1945–1946. The second comprised land expropriated from “socially undesirable elements” (e.g., relatively large landowners) after the communist takeover in February 1948. There was never any intention of restoring the first component of state-owned land to pre-1945 owners. The second component, however, was judged to have been “illegally expropriated” by communist governments and a subject of potential restitution. Title to land expropriated after February 1948 was to be returned to former owners, who would subsequently have to decide whether to withdraw the restituted land for individual use from the cooperative or state farm that had been using it since 1948. Individuals who had never lost ownership of their land—the majority of the population—also had to decide whether to withdraw it from former collective users, but such decisions did not involve restitution.\textsuperscript{16}

When the process of land restitution commenced in 1991, the public sector—primarily 750 agricultural cooperatives and state farms—controlled 96 percent of the country’s agricultural land.\textsuperscript{17} The legal status of land tenure for cooperatives was changed from free use to lease. In order to implement the lease arrangements, all managers of public-sector farms were requested to prepare detailed ownership lists of all their land holdings. To the extent

\textsuperscript{14}This system is based on a 1 to 10 scale, where 1 represents a centrally planned economy and 10 a fully developed market economy.

\textsuperscript{15}“Market-compliant operations” include a mix of profit-oriented corporate farms and individually operated units.

\textsuperscript{16}The restitution process was governed by the 1991 law “On Conciliation of Property Rights to Land and Other Agricultural Property” (Act No. 229/1991). Claims for the restitution of former ownership rights had to be submitted to local land offices by the end of December 1992. About 40,000 claims had been submitted by the statutory deadline and 90 percent had been settled by December 2001. The total area restituted by local land offices comprised 200,000 hectares, or about 8 percent of agricultural land in Slovakia (Ministry of Agriculture, Land Consolidation Division, unpbl. data).

\textsuperscript{17}Control was determined by use, not by ownership.
that farm managers were able to identify former owners, the procedure in effect involved restitution of titles to well-defined land plots that had been cultivated by the local cooperative for years and possibly decades. Portions of land that local farm managers could not identify with individual owners (about 340,000 hectares) were transferred to the State Land Fund.\textsuperscript{18} Claims to this unidentified land could be submitted until the end of 2000 (a deadline subsequently extended by parliament to the end of 2005).

The routine settlement of restitution claims outside the Land Fund (by local land offices) and ongoing cadastral work with land registration and titling inevitably led to an increase in the unidentified component, as owners previously identified on paper failed to materialize or their claims were rejected by local land offices. Thus, it is estimated that 1 in every 8 claims submitted to local land offices (by the end of the 1992 deadline) had to be referred to the State Land Fund because grounds for physical restitution could not be established. Accordingly, land controlled by the State Land Fund increased to a level of over 650,000 hectares in 1994 and has remained at about 600,000 hectares since 1995 (of which 108,000 are firmly classified as state-owned land, and 480,000 hectares remain unidentified). The balance of unidentified land in 2002 was six times as large as the amount identified with claims since 1994, and experience suggests that most of the unidentified land may remain indefinitely under the Fund’s administration. The Land Fund, with 600,000 hectares in reserves, controls a very significant 24 percent of the country’s total agricultural land. The fact that such a large share of agricultural land remains under state administration despite a declared land privatization policy is clearly an anomaly.

The land administered by the State Land Fund does not remain idle, as all of it (both state-owned and unidentified) is leased to agricultural users.\textsuperscript{19} Individual users accounted for only 6 percent of the land leased by the Fund. On the other hand, all 1,400 corporate farm entities leased land from the Fund, accounting for 92 percent of all land leased by it.\textsuperscript{20} Land leased from the Fund thus represented 30 percent of the total land resources of an average corporate farm (with total holdings of 1,320 hectares).

\section*{The Dominant Role of Large Corporate Farms}

Although primarily aimed at individuals, the land reform also prompted significant changes in the structure of corporate farms. State farms, which controlled 15 percent of land in 1989, have virtually disappeared. The share of agricultural cooperatives declined from 69 percent of land in 1989 to 51 percent in 2001 (VUEPP database), and a new category of corporate farms has emerged since 1992. These are the so-called private business or commercial companies, whose share in agricultural land increased from zero before 1992 to 33 percent in 2001 (ibid.). The new private companies absorbed virtually all land of former state farms as well as land from agricultural cooperatives. Some agricultural land also shifted from cooperatives to individual farms.\textsuperscript{21} In 2002, corporate farms managed (but did not own) over 80 percent of the agricultural land in Slovakia (ibid.)—not much less than their share during

\textsuperscript{18}The State Land Fund is a public institution established by law in January 1992 and authorized to sign lease contracts for continued use of “unidentified” land.

\textsuperscript{19}The State Land Fund is not allowed to sell farmland, so that only non-farming land may be sold. At the end of 2000, the Land Fund had 2,600 outstanding lease contracts, of which ca. 1,000 were with various individual users.

\textsuperscript{20}The average lease for corporate farms was nearly 400 hectares.

\textsuperscript{21}By December 2001, owners had withdrawn 256,000 hectares from former cooperative users; this land was transferred to individual use or leased to new companies.
Changes in the organizational structure of agriculture were accompanied by changes in the average size of corporate farms, which are now substantially smaller than in the socialist era—averaging about 1,500 hectares per farm, less than the ca. 2,500 hectare average prevailing before 1990. Yet they are larger than corporate farms in the neighboring transition countries and considerably larger than the fully commercial farms in market economies (100–400 hectares depending on availability of agricultural land). The farm consolidation trends observed in the United States and predicted for the EU countries are generally not expected to reach the level of the large corporate farms that succeeded the cooperatives in Slovakia and in other former socialist countries. Above a certain size limit, the transaction costs of managing a large farm more than offset any advantages that may accrue from economies of scale, which justifies the downsizing of the traditional large-scale farms as one of the desiderata of transition. The continued dominance of large-scale corporate farms may explain (at least in part) the relatively poor performance of Slovak agriculture.

As a result of the twin processes of land restitution and farm restructuring, the share of land in individual cultivation increased steadily between 1989 and 2001. The increase was mainly associated with the emergence of a new category of individual farms distinct from the traditional household plots. The most recent data from Slovakia’s 2001 Farm Structure Census (Census, 2002) show that self-employed farmers—both registered and non-registered—cultivate 12 percent of land, while another 4 percent is cultivated in small household plots that are not classified as farms. The share of land in individual use quadrupled during the 1990s, but Slovakia is still far behind other CMEA European countries by this measure of agricultural transformation. In Hungary, Romania, and Bulgaria, individual agriculture controls about 50 percent of the total land. In the neighboring Czech Republic, individual farms (including household plots) control more than 30 percent of agricultural land. But Slovakia is comparable to Russia, where the individual sector cultivates 15 percent of farmland. This situation in Slovakia is a reflection of general government policy, which is still conceptually bound by the large-farm bias deriving from the traditional socialist view of economies of scale.

**FINANCIAL PERFORMANCE OF AGRICULTURE**

The contribution of the individual sector to agricultural output always has been much higher than its share in agricultural land. In 1989–1990, when the individual sector controlled about 4 percent of agricultural land, it generated 15 percent of agricultural output (Statistical Yearbook, 1991). In the 1990s, the growth of the individual sector to about 16 percent of agricultural land was accompanied by a rapid increase of its share in agricultural output,

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22No firm estimates of the amount of land in individual use exist, because of the lack of an established classification distinguishing household plots and individual farms, and also the lack of a comprehensive accounting of the land holdings for these two groups of individual producers.

23The performance analysis reported in this section of the paper relies on financial information routinely collected by VUEPP from ca. 1,200 corporate farms and 850 individual farms with commercial orientation and compiled as consolidated farm financial reports. The corporate farms in the sample constitute 85 percent of the corporate farm sector. The commercial individual farms, although not representative of all individual farms in Slovakia, are the closest to corporate farms in terms of business orientation and their financial results can be legitimately used for the purpose of detecting differences due to organizational factors. In this section, the term “individual farms” generally refers (unless explicitly qualified) to the subgroup of “commercial” individual farms.
which reached 30 percent in 1995 and remained roughly at that level for the rest of the decade.\textsuperscript{24}

The lower average productivity of corporate farms is reflected in lower profitability. The corporate farm sector as a whole barely breaks even after all production and operating costs: the operating profit was a negligible 1–2 percent of sales during the entire period 1995–2001 (Table 1). This level of operating profit is insufficient to cover interest charges, which run at a level of 2–3 percent of sales and generally leave the corporate farms as a group in a net loss position.\textsuperscript{25} Although the level of debt in relation to sales is not excessive,\textsuperscript{26} corporate farms as a group are unable to service their debt from profits and are thus basically insolvent. The profit situation is much better for the sample of individual farms reporting financial information, which in aggregate show a net profit after interest charges at a level of about one percent of sales (Table 1). There is, of course, considerable variability in financial performance

\textit{Table 1. Impact of Subsidies on Profits of Corporate and Individual Farms, 1995–2001\textsuperscript{a}}

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<td>1252</td>
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<td>Value of production</td>
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<td>49493</td>
<td>46224</td>
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<td>50900</td>
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<td>Operating profit</td>
<td>392</td>
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<td>-24</td>
<td>947</td>
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<tr>
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<td>1163</td>
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<tr>
<td>Net profit\textsuperscript{b}</td>
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<td>-1558</td>
<td>-2040</td>
<td>-590</td>
<td>404</td>
</tr>
<tr>
<td>Percent of farms reporting losses</td>
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<td>46 percent</td>
<td>48 percent</td>
<td>47 percent</td>
<td>28 percent</td>
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<tr>
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<td>6800</td>
<td>7110</td>
<td>10000</td>
<td>8980</td>
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<tr>
<td>Net profit without subsidies\textsuperscript{c}</td>
<td>-8069</td>
<td>-7508</td>
<td>-8297</td>
<td>-9786</td>
<td>-8576</td>
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<tr>
<td>Individual farms</td>
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<td>1758</td>
<td>1902</td>
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<tr>
<td>Operating profit</td>
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<tr>
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<td>8</td>
<td>9</td>
<td>10</td>
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<td>Net profit\textsuperscript{b}</td>
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<td>10</td>
<td>22</td>
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<td>Percent of farms reporting losses</td>
<td>37 percent</td>
<td>31 percent</td>
<td>28 percent</td>
<td>31 percent</td>
<td>29 percent</td>
</tr>
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<td>250</td>
<td>270</td>
<td>274</td>
<td>542</td>
<td>537</td>
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<tr>
<td>Net profit without subsidies\textsuperscript{c}</td>
<td>-231</td>
<td>-254</td>
<td>-246</td>
<td>-507</td>
<td>-533</td>
</tr>
</tbody>
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\textsuperscript{a}All financial data are in million kronas.
\textsuperscript{b}As reported after taxes.
\textsuperscript{c}Before taxes.

Source: Compiled from financial statements of agricultural producers.

\textsuperscript{24}The shares of a subsector in output and land can be used to calculate the productivity of that subsector relative to the entire sector. Since the entire agricultural sector produces 100 percent of output on 100 percent of land, its relative productivity can be characterized as 1. The subsector of individual farms produces 30 percent of output on 16 percent of land, and its relative productivity is almost double the average productivity of the entire sector. The corporate farms, on the other hand, produce 70 percent of output on 84 percent of land and the relative productivity of the corporate subsector is 0.8, i.e., 20 percent less than the average productivity of agriculture as a whole.

\textsuperscript{25}Some improvement was recorded for the first time in 2001.

\textsuperscript{26}About 7 months of sales are needed to cover the total debt.
among farms in each of the two groups. Table 1 shows that nearly 50 percent of the corporate farms reported net losses after interest charges between 1995 and 2000, although the percentage of individual farms reporting losses was much lower (around 30 percent in recent years).

The value of production in Table 1 includes the various subsidies that farms receive from the state. It seems that the profitability of agriculture, to the extent that some farms are still profitable, is largely maintained by government subsidies. These run at about 15 percent of the reported value of production, and Table 1 adjusts the reported profits for the effect of subsidies. Without subsidies, corporate farms would experience much greater losses than those reported in their annual financial statements, while individual farms as a group would shift from aggregate profit to aggregate loss. The situation without subsidies appears to be very grave, with farms showing a loss of 0.15–0.20 krona for each krona of production.

Profitability is essentially determined by efficient management, and higher profitability of individual farms as a group provides evidence of higher efficiency of this organizational form in agriculture. Yet the operating profit technically depends on the ratio of prices received for farm products to those paid for farm inputs—the so-called “terms of trade” in agriculture. The index of prices received by farmers increased by about 90 percent between 1989 and 2001, while the prices of farm inputs increased by more than 260 percent during the same period.27 The terms of trade for primary agriculture correspondingly dropped from 1 in 1989 to 0.5 in 2001. In market economies, farmers counteract the universal phenomenon of deteriorating terms of trade by increasing production efficiency. They sell more units of output at a lower farm-gate price, and thus manage to preserve their profitability despite the rising input prices. Slovak farms apparently have not been able so far to improve their production efficiency to a sufficient extent, and the deteriorating terms of trade have had a negative impact on their profitability. This is true to a greater extent for corporate farms rather than for the individual sector.

Lower profitability of corporate farms inevitably leads to a higher proportion of debt in their financing mix. Debt of all types accounts for about 40 percent of total capital for corporate farms and 20 percent for individual farms. Individual farms carry a smaller proportion of bank loans in their debt mix. While bank loans account for 17 percent of total capital in corporate farms, they contribute only 6 percent of capital in individual farms.28

In recent years, a significant change occurred in the structure of sources of debt for corporate farms. Most commercial banks are now foreign owned and are reluctant to lend to loss-making farms. As a result, between 1995 and 2000 the share of loans dropped from 27 percent to 17 percent of the total capital employed by corporate farms. The share of suppliers’ credit and other payables (outstanding taxes or payroll arrears, for instance) correspondingly increased from 16 percent to 20 percent of the total capital, or from 37 to 54 percent of all debt. This indicates that in 2000 corporate farms were relying less on bank credits and more on suppliers credit (and other payables) than in 1995. Suppliers and other payables (such as arrears for taxes and social security to the government) are thus the main source of “rolling over” debt in agriculture.

The continuing losses in agriculture, and especially the fact that nearly 50 percent of corporate and 30 percent of individual farms do not generate enough operating profits to cover interest expense even with generous subsidies, would normally suggest that a large

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27These figures are VUEPP estimates derived from price series in Statistical Yearbook (2002).
28This difference in the composition of debt may suggest that the lower overall reliance of individual farms on debt is attributable to greater difficulties with access to credit and not to individual aversion to borrowing often observed among individual farmers in various countries.
proportion of Slovak farms should be allowed to go bankrupt. However, Slovakia still operates in a regime of soft budget constraints, where bankruptcy is not strictly enforced and insolvent farms are allowed to go on for a variety of political reasons. In the few cases where bankruptcy proceedings have been formally initiated for some of the heavily indebted farms, it will take years for the slow and overburdened legal system to reach the stage when the bankrupt borrower is actually restructured or liquidated.

**THE STATUS OF RURAL DEVELOPMENT**

More than a third of Slovakia’s population (36 percent) lives in rural districts, which are characterized by predominance of small communities with less than 5,000 inhabitants. Table 2 presents the main characteristics of the rural districts in comparison with other (urban and semi-rural) parts of the country. Population in rural areas is substantially poorer than in the urban area. Although the highly urbanized area around Bratislava is one of the richest in Central Europe, with an average income per capita matching the EU average of 20,000 euros, wages in the least developed rural areas are only 57 percent of the urban salaries (European Commission, 2001, Table 2.0.1.1; Statistical Office, 2001, Table 2.2). Agriculture still accounts for about 15 percent of total employment in the least developed rural areas—more than double the national average and quite high by European standards. Under current conditions, agriculture remains a relatively attractive activity in the rural regions, possibly because of constraints to business creation and/or a lack of expertise to start new business operations. Unemployment rates are somewhat higher in rural areas, but not dramatically so (23 percent compared with 19 percent nationally; Table 2).

Although urban areas promise generally higher wages and lower unemployment, there is no significant out-migration from rural communities. In part this may be attributed to the lack of a well-functioning housing market in the cities, but it is also clearly due to the disincentives associated with Slovakia’s extensive and reasonably effective system of social benefits (World Bank, 2001). Poverty in rural areas is only slightly higher than in the cities.29

Rural areas receive but a small share of investments, which are heavily concentrated in urban areas, especially in the five districts around Bratislava. The investment rates in rural areas are about 15,000-20,000 krona per capita compared with 56,000 krona nationally and 272,000 krona in the urban districts (Statistical Office, 2001, Table 3.1). As a result, about 53 percent of all business entities in Slovakia are concentrated in the eight regional town centers and only about 14 percent of all firms are located in rural municipalities.30 The strong differences in rates of investment and number of firms between Bratislava and other regions reflect the existence of substantial transaction costs or other constraints to being located far from Bratislava.

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29 According to the most recent microcensus conducted by the Slovak Statistical Office in 1996, about 13 percent of the country’s rural population lived below the minimum subsistence level, compared with about 10 percent in urban areas. Without social transfers, however, the rural-urban gap turns out to be much wider, with poverty in rural areas rising from 13 percent to 46 percent of the population, while urban poverty rises to 37 percent (authors’ calculations). The microcensus results have not been published, although some of these data are reported in Steele (2001).

30 The differences are even more striking in terms of the distribution of foreign-owned firms in Slovakia. For every 1000 inhabitants, there are six foreign-owned firms in Bratislava and only 0.5 in the other districts. Current flows of foreign direct investment are heavily concentrated in the urban areas of Bratislava (59 percent) and Košice (18 percent), even though labor costs are on average more than 50 percent lower outside Bratislava.
One of the prerequisites for the development of a healthy and diversified rural economy is the existence of good supporting infrastructure, including fast roads and railways connecting producers to main markets, electrification, and telecommunications. The latter, as well as other basic services decrease significantly as we move to less developed rural areas (Table 2). Although Slovakia’s local road network is reasonably well developed, public transport connections in many rural areas are weak, preventing people from pursuing employment opportunities outside their domicile. Fast, limited access motorways connect only some of the major cities (Fig. 6), and travel times between Bratislava and the eastern parts of the country are quite long. Thus, the relatively isolated rural areas, with their underdeveloped housing infrastructure and lack of basic services, are unable to attract adequate amounts of new investment to stimulate economic development.

Table 2. Selected Socioeconomic Indicators by Type of Region, 2001

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Units</th>
<th>Urban</th>
<th>Semi-rural</th>
<th>Rural</th>
<th>Slovakia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Most developed</td>
<td>Least developed</td>
<td>Most developed</td>
</tr>
<tr>
<td>Regions</td>
<td>Number</td>
<td>9</td>
<td>19</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Population</td>
<td>Percent</td>
<td>12</td>
<td>30</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>Area</td>
<td>Percent</td>
<td>1</td>
<td>24</td>
<td>25</td>
<td>27</td>
</tr>
<tr>
<td>Investmentsc</td>
<td>Percent of national average</td>
<td>62</td>
<td>19</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Monthly salary</td>
<td></td>
<td>137</td>
<td>97</td>
<td>85</td>
<td>89</td>
</tr>
<tr>
<td>Population change due to migration</td>
<td>Per 1000 people</td>
<td>-0.7</td>
<td>0.3</td>
<td>-0.2</td>
<td>1.6</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>Percent</td>
<td>8.2</td>
<td>14</td>
<td>23.2</td>
<td>23</td>
</tr>
<tr>
<td>Employed in agriculture</td>
<td>Percent</td>
<td>0.4</td>
<td>5.6</td>
<td>8.9</td>
<td>10.9</td>
</tr>
<tr>
<td>Roads</td>
<td>Km per 1000 km²</td>
<td>124</td>
<td>57</td>
<td>55</td>
<td>42</td>
</tr>
<tr>
<td>Tarmac roadsc</td>
<td>Percent</td>
<td>84</td>
<td>87</td>
<td>78</td>
<td>87</td>
</tr>
<tr>
<td>Post officesc</td>
<td>Per km²</td>
<td>8</td>
<td>26</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>Telephonesc</td>
<td>Per 100 inhabitants</td>
<td>53</td>
<td>31</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Percentage of occupied dwellings with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water supplyc</td>
<td>—</td>
<td>100</td>
<td>88</td>
<td>79</td>
<td>78</td>
</tr>
<tr>
<td>Central sewersc</td>
<td>—</td>
<td>96</td>
<td>61</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>Central heatingc</td>
<td>—</td>
<td>90</td>
<td>80</td>
<td>73</td>
<td>70</td>
</tr>
<tr>
<td>Bathroomc</td>
<td>—</td>
<td>98</td>
<td>94</td>
<td>91</td>
<td>91</td>
</tr>
<tr>
<td>Washing machinec</td>
<td>—</td>
<td>74</td>
<td>65</td>
<td>55</td>
<td>56</td>
</tr>
<tr>
<td>Personal computerc</td>
<td>—</td>
<td>21</td>
<td>13</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

a5.39 million.
b49,035 km²
cData for the year 2000.

Source: Authors’ calculation based on Statistical Office, 2001 and the 2001 population census provided by the Statistical Office of the Slovak Republic.
Similarly inadequate in the rural countryside is the availability of an educated and skilled labor force. The education system in Slovakia compares favorably with most developed countries,\(^{31}\) and education spending by district is evenly distributed. However, performance assessments carried out by the Ministry of Education reveal that students in rural areas fare much worse than those in the cities (Ministry of Education, 2000), suggesting that human capital in rural areas may not be as well trained as in urban.

Current Slovak policies for rural development are mainly focused on government intervention in agriculture and agricultural support, while failing to emphasize basic infrastructure such as transport and telecommunications, and underestimating human capital and the development of entrepreneurship in agriculture. The government needs to devote more attention to the removal of existing constraints to rural development that perpetuate the relative backwardness of rural areas.

**CONCLUSIONS**

The pace of policy and institutional reforms in Slovakia has been relatively slow, reflecting a lack of political resolve to facilitate the transition toward market-based agriculture. Slovak agricultural policies still are shaped by the socialist past in several important aspects. They are characterized by heavy government intervention, an unjustified pursuit of self-sufficiency, and a persistent bias against small farmers. The current policies constitute the main obstacle to improving the performance of Slovakia’s agricultural sector.

As a result of the relatively slow pace of reforms, the process of farm restructuring remains largely uncompleted, and this appears to be the second major obstacle impeding better agricultural performance. The political climate in Slovakia has created barriers to transparency, increasing the opportunities for rent-seeking by established interest groups. Managers of traditional Slovak farms seem to have been in a better position than in other Central East European countries to apply survival strategies based on payment arrears, soft state budgets, and bad debts; they also seem to have enjoyed more effective political

\(^{31}\)This is demonstrated by the good results achieved by Slovak students in international competitions.
representation and support. The concentration of land in relatively inefficient large corporate farms has impeded transition to efficient individual farming and weakened the negotiating position of individual farmers versus processors, traders, and in the political arena.

A major task facing Slovakia on the eve of EU accession is to increase the competitiveness of its agriculture. We argue that this requires higher productivity and efficiency, which can be achieved by policies that facilitate structural reorganization in agriculture. Such policies should allow rapid liquidation of inefficient farms and remove obstacles to the expansion of new and more efficient farming units. It is on these issues of agricultural reform that policymakers should concentrate, rather than on the prevailing concerns about self-sufficiency and hypothetical economies of scale. The development of efficient farms can be encouraged by ensuring a level playing field for farms of all sizes and organizational forms. Since land markets allow land resources to flow to the most efficient operators, the removal of various administrative constraints to land transactions becomes an important component of such policies. Rapid privatization of state-held land reserves would create an adequate supply of agricultural land in the market. Our analysis leads us to believe that these principles should enhance efforts to achieve a smooth transition to market and relatively easy accession of Slovakia to the EU.

REFERENCES


