Selected macro-economic indicators relating to structural changes in agricultural employment in the Slovak Republic

Milan Olexa, PhD¹. Statistical Office of the Slovak Republic

Economic changes after the year 1989 in Slovakia focused on transformation of central planned economy to the market oriented system. It brought radical change in the sphere of economy as well as in the social sphere. Changes in enterprises and at the economy branches level resulted into transformation of ownership relations, production programs and the structure of labor force. Gradually, the extinction of non-profiting enterprises was reported, new branches of economy began to grow and their weight in the economy of the Slovak Republic overall changed. This article aims to characterize the macroeconomic development in Slovakia (by means of selected indicators) from 1989 till now. It is focused particularly on development of employment, wages and labor productivity in the branch of agriculture. Article is based mainly on information sources of the Statistical Office of the Slovak Republic.

1. Analysis of selected data on macroeconomics development in the period of 1989-1998

1.1 Gross domestic product

Transition of the Slovak economy influenced also the development of GDP. In comparison with the year 1990, the GDP in 1998 was 2,6 times higher and represented 717,4 mld. Slovak Crowns. However, the development of real GDP in the years 1990-1998 was not equable. In the period of 1990-1993 it decreased by 23,2 % as a result of transformation provisions and lost of the eastern market sales. After the split-up of Czechoslovakia and start of independent Slovak Republic relative high growth of GDP was reported in the period of 1993-1997 (in 1997 it was higher by 27,3 % in comparison with the year 1993). Mainly, that was a result of an increasing foreign trade with the Czech Republic and relatively good adaptability to the European Union market as the raw materials and goods were concerned. Increasing trend began to slow down in the 4. Quarter of 1998, which was influenced first of all by insufficient development of progressive branches as a result of privatization orientated to slowly developed financial sources as well as to the slow investment development. GDP per capita increased from 2 811 USD in 1993 to 3 225 USD (by 14,7 %) in the year 1998.

1.2 Inflation

Inflation development in the monitored period (measured by consumer price index) reflected an adopted administrative-economic provisions, connected with general liberalization of prices, changes in taxation system (introducing consumer tax and added value tax) and later price releasing by deregulation provisions. Total inflation rate in the period 1990-1998 reached 225,9 %. In the structure of goods according to the European goods classification (COICOP), faster increase of prices then average for the total consumption in the monitored period (1991-June 1999 compared with 1990 average) was reported in housing services with the inflation increase of 382,2 %. Furthermore health services - inflation increase of 276,8 % and dwelling's equipment 271,3 %.

¹ The author would like to acknowledge the suggestions as well as the funding support provided by the Statistics Division, FAO for preparing this paper.

1.3 Wages development

By evaluating the wages development it is desirable to take into account first of all the influence of prices and taxes, as well as short-term influence of regulation provisions in the scope of so called wages directions. Certain changes were reported in the years 1990-1991 and 1993, when the prices liberalization took place, new tax system was introduced and there was a devaluation of Czechoslovak and Slovak currency. In the years 1994, 1997 and 1998 as a reaction to unfavorable wages development so called wages directions took place. In the years 1990-1991 increases of average nominal wage did not eliminate the growth of prices and consequently there was a deep decrease of real wages in 1991 (by 26,2 %).

In the year 1992 economic conditions for desirable wages increase were not created at the macro level nor at micro level. In spite of that, the wages dynamics yearly increased by 20,5 % nominally and by 8,7 % in real, while the labor productivity declined. This trend continued also in 1994 and at the micro level the labor productivity (from added value) lagged behind the increase of average nominal wage. In the second half of 1994 introduction of selective wages regulations was not enough for radical change in the scope of the whole year. The year 1995 with the yearly growth of real wage (up to 4,4 %) cannot be positively evaluated according to the labor productivity at macro level. In the year 1996 the adequate relations between wages development and labor productivity were slightly damaged repeatedly. However, real wages increased yearly by 7,1 %. Unfavorable trend continued also in 1997 and consequently the wages regulations took place in the last quarter. Relations between labor productivity and average nominal wage at the macro level improved.

Wages regulations in 1998 positively influenced the relations between wages and labor productivity not only at macro level, but also at micro level whereas the yearly growth of labor productivity (from added value) lagged behind the increase of average nominal wage at entrepreneur economic subjects decreasingly only by 1,0 point. In the first half of 1999 dynamics of nominal wages was decreasing and on average the real wages stagnated, in some branches declined. In spite of increasing growth of average nominal wage in the period 1990-1998 by 207,9 %, the real wages in total did not increase and in 1998 lagged behind the 1990 level by 2,9 %.

Different development of wages in economic activity branches is typical by considerably increased span of average nominal wages from the long-term point of view. This trend is further continued. In the entrepreneur sphere the differentiation was not always a result of reached economic results. For example in the branch of finances and insurance there was an increase of average wages 266 % in the period 1991-1998, while in the Slovak Republic in total it increased only by 165,3 %. In budgetary and contribution sphere the stagnation of nominal wages growth resulted into the fact the level of wages gradually lagged behind the level of wages in the entrepreneur sphere. It was due to the lack of budget sources particularly in education and health.

Differentiation of wages by economic branches as time went by became more considerable. While in 1991 only in one branch the level of average nominal wage was higher than in total Slovak Republic (it was finances and insurance), in 1998 there were more branches like that. Largest increase of average nominal wages in the 1991-1998 period was reported in the branch of finances and insurance, car trading and repairs and real estate. The smallest increase was reported in agriculture, education and health.

1.4 Employment

Analysis of the labor force sources and employment is based first of all on the results of Labor Force Sample Survey, conducted by the Statistical Office of the Slovak Republic. The Survey has started in the year 1993. Data till 1993 are from the labor force balance. Changes in the economics of the Slovak Republic after 1989 were reflected also in the employment development. From 1990 till 1993 employment in the Slovak economics was declining; it decreased by 331,4 thousand persons (by 13,4 %) in this period. There was a deepest yearly decrease in 1991, when the number of employees decreased by 8 % as compared with 1990. In the beginning of the economics reform the main reason was a conversion of arms production, increasing costs of imported input in raw material consuming production and disintegration of eastern market. With decreasing of the total level of employment, changes in the structure of employment went together. Structure by sectors changed, the share of tertiary sector increased from 41,5 % in 1990 to the value of 50,9 % in 1993. Share of employment in secondary sector decreased by 6,5 percentual points and in primary sector it decreased by 2,9 percentual points. In the year 1999, in primary sector worked 7,4 % of employees, in secondary one 38,5 % and in tertiary sector there were 54,1 % of the total employment in the Slovak Republic.

According to the Labor Force Sample Survey in the period 1994-1999 employment in the Slovak Republic increased by 21,9 thousand persons, i.e. by 1 % (however, from 1997 it is declining yearly again), exlusively in private sector. In public sector employment gradually declined in this period. It was reflected in the structural change of employment by ownership forms; while in 1990 the share of private sector on the total employment was 5 %, in 1993 it was 34,5 % and in 1999 already 65,2 %. There was an expressive decline of employment in the Slovak economics in the year 1999, when it decreased by 66,5 thousand persons (by 3 %), while the share of employment in private sector on the total employment remained on the 1998 level. Structure of economic activity of the population of the Slovak Republic in 1999 is shown in the Table 1.

Table 1: Structure of economic activity of the population of the Slovak Republic, 1999

Total	Male	Female
5 393,4	2 623,7	2 769,7
1 101,8	563,6	538,3
3 332,1	1 731,7	1 600,4
959,5	328,5	631,0
1 718,5	645,7	1 072,8
2 573,0	1 414,4	1 158,6
2 132,1	1 163,7	968,4
416,8	226,6	190,3
60,0	68,7	52,0
49,7	56,5	43,4
16,2	16,0	16,4
	5 393,4 1 101,8 3 332,1 959,5 1 718,5 2 573,0 2 132,1 416,8 60,0 49,7	5 393,4 1 101,8 3 332,1 959,5 1 718,5 645,7 2 573,0 2 132,1 416,8 60,0 68,7 49,7 56,5

Source: SO SR, LFS

1.5 Short summary of the year 1999

By provisional estimates, the gross domestic product in 1999 was higher in comparison with 1998 by 1,9 % in real (in current prices by 8,6 %) terms. The growth was by 2,5 percentual points slower than in the year 1998. Inflation rate in December 1999 reached 14,2 %. It was by 8,6 percentual points higher in comparison with December 1998. At the labor market

decreasing demand for labor force has continued. It resulted into decline of employment and increase of unemployment. According to the Labor Force Sample Survey, employment in economics on average in 1999 yearly decreased by 3 %. Unemployment rate increased by 3,7 percentual points to 16,2 % in comparison with the year 1998.

Average nominal monthly wages of employee in the Slovak economics reached 10 728 Sk and in comparison with 1998 it was higher by 7,2 %. The growth was by 2,4 percentual points slower than in 1998. According to the growth of consumer prices the real monthly wage decreased by 3,1 % as compared with the year 1998. Employment in agriculture and fishing decreased also in the year 1999 to the number of 145 000, it means by 7,2 %. Monthly wages in agriculture increased nominally by 7,7 % and represents 79,6 % of the average wages in Slovakia.

2. Comparison of selected indicators of European Union with CEFTA countries

The status of the Slovak agriculture in the whole economics in comparison with EU countries as well as with CEFTA countries can be nowadays evaluated according to the 1996 data. Comparison is shown in the following Table 2.

Table 2 : Status of the Slovak agriculture in the whole economics in comparison with EU and CEFTA countries

	EU	Czech Republic	Hungary	Poland	Slovakia
Share of agriculture in:					
- GDP creation (%)	1,7	3,0	7,2	6,6	4,7
- employment (%)	5,1	6,0	8,2	26,9	6,5
(including forestry and fishing)					
Workers per 100 ha agricultural	5,2	7,0	5,3	23,4	5,9
ground					

Concerning the prices, while in European Union there is a equable development of the input prices, prices of agricultural products and consumer prices of food-stuffs, in CEFTA countries there is a trend of faster increase of input prices than prices of agricultural products and consumer prices of food-stuffs.

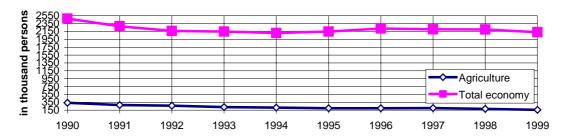
3. Employment in agriculture in the Slovak Republic in the 1989-1998 period

Economic reform heavily influenced particularly agriculture. Fiscal limitations (lowering of subventions) together with budget limitation as a consequence of decreasing purchase able demand and monetary restriction radically limited the sources needed for production innovation and modernization. Economic reform in agricultural and food-stuff system actually began already in 1990 with so called price correction and suspension of negative sales tax to the consumer prices account and also with restriction of agricultural subventions (from 17,6 mld. Sk to 10,4 mld. Sk already in 1991). Considerable slowing growth of the prices of agricultural production, together with liberalization of the foreign trade and decrease of real income of population created a demand barrier in agriculture. Demand for food-stuff, mainly of animal origin, decreased yearly by more than 25 %, while it was declining continuously with slight variance till the year 1998. In the period 1990-1999, employment in agriculture² decreased by 178,1 thousand persons, which is 51,5 % of the total employment decrease in the Slovak economics. Due to this fact, the share of employment in agriculture on the total employment declined from 13,5 % in 1990 to the value of 7,4 % in the year 1999.

Graph 1

² According to classification NACE (groups A+B) agriculture, hunting, forestry and fishing is included

Trend of employment in agriculture and economy of the SR



Labor force balance was based on the results of annual establishment reporting conducted in every establishment and organization irrespectively to the number of employees. It also included qualified estimates on employment in small private sector and business sector. Labor Force Survey in Slovakia is conducted from 1993 in selected dwelling households. The sample size is 10 250 dwellings, it represents about 0,6 % of permanently occupied dwellings in Slovakia. The scope of surveyed indicators and methodology is compatible with international ILO definitions, recommendations and EUROSTAT regulations. Results of Labor Force Survey are calculated to the demographic data on Slovak population. They are published in quarterly periodicity.

Table 3: Average number of employees³ in Slovak economics in the period 1990-1999 (thousands)

									(::::040	
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Slovak										
economy (total)	2477,6	2280,8	2163,2	2146,2	2110,2	2146,8	2224,9	2205,9	2198,6	2132,1
Of which:										
employees					1977,2	2006,7	2082,5	2065,9	2046,2	1965,0
entrepreneurs					130,7	137,8	139,4	137,4	148,6	161,4
contributing										
family workers	١.			١.	2,3	2,3	2,9	1,9	1,1	3,1
Of which:					,	,	'	,	,	,
In agriculture	335,3	280,2	264,1	227,7	214,4	197,2	198,0	202,3	181,4	157,4
employees					206,8	190,8	192,2	195,4	172,6	148,3
entrepreneurs					7,6	6,3	5,7	6,8	8,8	8,8
Contributing										
family workers					-	-	-	0,1	-	0,1
Share of										
agriculture in the										
total	13,5	12,3	12,2	10,6	10,2	9,2	8,9	9,2	8,2	7,4
employment (%)	1	-	-	1			'			

From the point of view of a total employment in Slovak economics, employees represented the largest group, in 1999 it was 92 % of the total. Entrepreneurs (firm owners, tradesmen, own account agricultural workers) represented 7,6 % and contributing family workers represented 0,1 %. In the branch of agriculture the share of entrepreneurs including helping family members reached only 5,7 %⁴. It means, in Slovakia there is not sufficient interest to be entrepreneur in this branch. The possibility of working part-time was used only by 2 % of employees on average in the Slovak economics, of which in agriculture it was 2,1 %.

In the development and structure of employment in the Slovak Republic a considerable role has a hidden employment. According to unofficial estimates it represents about 220

³ Data till 1993 are from labor force balance, starting from 1994 are based on Labor Force Sample Survey.

⁴ Persons not registered as entrepreneurs but working on their own ground or garden are excluded

thousand persons. In this number some registered unemployed are included, but also another groups of persons working particularly in agriculture, constructing, trade and services. In the branch of agriculture, hunting and related services the number of employees in organizations with over 20 persons (data source is the current statistical reporting on employment) decreased by about 250 thousand employees in the period of ten years. The decrease was mainly influenced by the decline of employees in agricultural cooperatives. In the year 1989 there were almost 261 thousand employees in agricultural cooperatives, while in 1998 it was only 69 thousand employees. On the other side, number of employees in small agricultural enterprises and the number of private farmers increased.

A similar trend was reported in the branch of forestry and wood production, the number of employees decreased by 25 thousand in the ten years period. According to the high average age of employees, to insufficient material stimulation and insufficient supply of young generation to agriculture, the reproduction of labor force in this important branch is seriously endangered despite of the fact that at agricultural vocational schools and at the University of Agriculture in Nitra there is a sufficient number of pupils and students. After finishing the studies only a few persons search for a job in agricultural practice. In the school year 1998/99 18 787 pupils were preparing themselves for their job at agricultural education establishment and centers of practical education. In vocational agricultural schools there were 9 456 students. Experts for agricultural practice are being prepared at the Slovak University of Agriculture. In the school year 1998/99 there were 8443 students.

Continuous decline of the number of employees in agriculture evokes a trend to getting to risk values, which may endanger the production of agricultural sector connected with limited social acceptability and problems with the maintenance of country and protection of environment. Integration of the released labor force into labor market is difficult.

Solving the problem of employment in agriculture should enable subventions from state budget which support: working a field in worse nature conditions with the aim of maintenance of agricultural production as a basic condition of ensuring the ecology, cultural characteristics of the countryside and the rural settlement of population production of non-conventional sources of energy production of live-work consuming goods (fruits, vegetables, grapes, healing plants etc.) development of supplementary activities including rural tourism.

Another sources of support affecting the employment are the following funds:

- 1. The State Fund of market regulation for purchasing agricultural overproduction and foodstuff commodities and for supporting the export, The State Fund for field protection and improvement and The State Supporting Fund for agriculture and food-stuff industry.
- 2. In limited scope the means of labor offices for active policy on the labor market were used, provided according to the projects given by entrepreneur subjects. The problem is with the small amount of finances designated for this purpose. More important role should have the means in the scope of PHARE projects as well as preparation and implementing of projects in the scope pre-entering help of European Union, mainly in the sphere of structural policy of rural development.

4. Development of wages in agriculture in the Slovak Republic in the 1989-1998 period⁵

⁵ Evaluation of the wages development in agriculture covers organizations with 20 and more employees, until the year 1997 organizations with 25 and more employees. Small agricultural organizations are not included due to the lack of data in the beginning of time series.

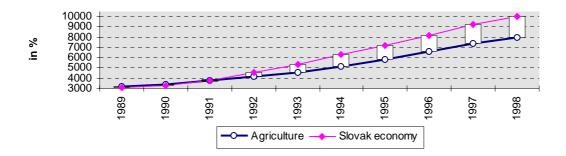
Average monthly wage of the employees in agriculture reached 7 930 Sk in the year 1998, which was 2,6 times more than minimal wage. In comparison with the previous year it increased by 7,7 %. In comparison with the beginning of economics transformation period it was multiplied nearly by 2,5. As compared with the average wages in the Slovak economics, wages in agriculture started to decline permanently in 1992 and in 1998 it represented only 79,3 % of the total average wages. Growing inflation was the reason of decreasing real wages, which was in 1998 about 70 % of the 1989 level. Real wages in agriculture decreased in comparison with pre-transitory period by 21,4 points more than real wages in the total economics.

Table 4

	Year									
Indicator	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average monthly										
wage in										
agriculture	3 212	3 365	3 371	4 148	4 556	5 191	5 835	6 579	7 363	7 930
Growth index of										
nominal wages										
Chain index	102,1	104,8	112,1	110,0	109,8	113,9	112,4	112,8	111,9	107,7
year 1989=100	100	104,8	117,4	129,1	141,8	161,6	181,7	204,8	229,2	246,9
Wage parity to										
the average										
wages in SR	102,2	102,7	100,0	91,3	84,7	82,5	81,1	80,7	79,8	79,3
Growth index of										
real wages										
year 1989=100	100	94,8	68,1	67,6	60,3	60,5	62,1	66,1	69,7	70,4

Declining trend of wages in agriculture is a result of low level added value, low technical level of production, insufficient use of capacities and organisation of work with high energy and material consuming. The next reason is non-transparent ownership relations, lower quality of management and employees, and wages regulations in the previous period. The consequence is a decrease of labor force in agriculture and its transition to other branches, particularly into tertiary sphere or transition to the unemployment registration at labor offices.

Trend of the average monthly wage in agriculture and economy of the SR



Highest wages were reported in contribution organizations (8 502 Sk) and share companies (8 500 Sk). Wages in the other entrepreneur forms are lagging behind the average wages in agriculture. Differentiation of wages is mainly reported in new legal forms in entrepreneur sphere, where the difference between the income of management, administration and manual employees on the other side was 5,4 - 6,4 thousand Sk. Technical managers and administrative employees were gaining 10 620 Sk. The best paid category by manual employees was the occupational group of tractor riders and mechanics with the income of 8 527 Sk, which was already half time more than other manual employees in plant production. In animal production the highest wages were reported by milch-cow attendants (8 103 Sk).

From the point of view of the territorial and administrative structure the highest income is reported by agricultural organization employees in the region of Bratislava, the most economically important region, where it was 9 713 Sk. It was by 25 % more than in the region of Prešov, where the income is in inter-regional comparison the lowest (territorial structure of Slovakia consists of 8 regions, 78 districts and 2883 municipalities).

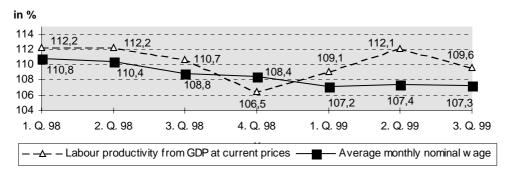
5. Labor productivity

One of the crucial sphere of every economics is productivity. It explains the influence of many factors including new technologies, capital investments, using energy and capacities as well as the skill and effort of labor force. In the Slovak Republic, the development of wages was determined by the process of collective negotiations with state interference in the last period. In 1994 as well as in 4.quarter of 1997 the Slovak government regulations concerning the relationship of qualitative indicators and wage growth came into force - the wages directions. It reacted upon the negative development from the point of view of wages inflation as well as disproportion of labor productivity development and average wages at macro and micro level.

In last two years (except of 4.quarter of 1998) the principle of priority growth of **labor productivity from GDP** before the growth of average wages of employees was maintained. As it is shown in the graph below, there were some problems in the 4.quarter of 1998, when the labor productivity growth from GDP lagged behind the wages growth.

Trend of labour productivity from GDP¹⁾ and average monthly wage of employee in the Slovak economy

Indices (equivalent period of the previous year = 100)



Labor productivity from GDP is calculated as a division of GDP in current prices by average evidence number of employees (1,9 mil persons). In data on wages the wages and income of entrepreneurs are not included.

In market production and services branches of the Slovak economics the level and development of employees' wages as well as its relationship to the labor productivity varied. In the branch of **agriculture and forestry** labor productivity derived from gross agricultural production per employee reached 290,6 thousand Sk in 1998, which is according to 1989 the growth by 3%. In this period the yearly productivity from gross agricultural production was unstable, due to not equable number of constant employees in agriculture and a declining agricultural production from 85 732 mil. Sk in 1989 to 52 720 mil. Sk in the year 1998.

Table 5 : Development of gross agricultural production, number of constant employees and labor productivity from gross agricultural production

Indices	1990	1991	1992	1993	1994	1995	1996	1997	1998
Gross agricultural production index Number of	92,2	91,0	78,3	91,9	104,8	102,3	102,0	99,0	94,1
constant employees index	96,9	80,1	108,7	77,6	107,7	92,0	100,4	102,2	89,7
Labour productivity index	95,2	113,6	72,0	118,5	97,3	111,2	101,6	96,9	104,9

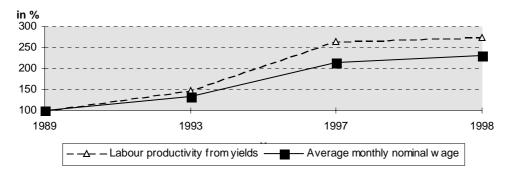
Separate aspect of wages and labor productivity development in agriculture is a relationship of wages development to the productivity from quantitative indicators - from revenues⁶ and added value. It can be statistically evaluated only at enterprises with 20 and over employees. In this category the average monthly wages of employees in 1998 increased by 131,3 % in comparison with the year 1989, while the labor productivity from revenues increased by 174,2 %. The above mentioned figures are shown in the following graph.

Graph 4

⁶ Revenues are understood as services reported in financial units. They are particularly sales revenues, financial operation revenues, indemnity payments from insurance companies etc.

Development of labor productivity from yields and average monthly nominal wages of employees in agriculture in the SR

Indices (year 1989 = 100)



For evaluation of agricultural production labor productivity from value added and yields in relationship to average monthly wages of employees the yearly index in 1998 (in comparison with 1997) for profiting and losing enterprises of the Slovak Republic is given in Table 6.

Table 6: Index numbers for Labor productivity per employee and average monthly Wages

	Labor productivity p	Average monthly	
Indicator	from added value	wages index	
Slovak Republic in total	105,8	110,4	109,0
- profiting enterprises	101,8	110,5	107,2
- losing enterprises	132,5	115,4	113,2

From the comparison of labor productivity from added value and from revenues in connection with wages in the surveyed period a favorable relationship can be seen on the whole. As a paradox, unfavorable relations are in profiting enterprises in added value and wages of employees.

6. Information sources

Statistical analysis concerning agriculture in Slovakia are generally based (according to the Law on State Statistics) on two sources: (a). Data collected from the Ministry of Agriculture of the Slovak Republic which are used for analysing specialized spheres and activities. It is, for example, related to the report on economy of agricultural enterprises containing financial indicators, data on costs, profit, production, investments, employees, wages, etc. It is an exhaustive survey with a half-year periodicity. (b) Data collected from the Statistical Office of the Slovak Republic which are used for the analysis of wages, employment and labor productivity. Mostly these data provided by the Statistical Office of the Slovak Republic are quarterly and yearly. Agricultural enterprises are the reporting units. Estimates are made for own-account physical persons working in agriculture - the farmers. Farm Census was conducted in Slovakia in the year 1995.

7. Information dissemination

The report entitled "The Report on Agriculture and Food Industry in the Slovak Republic" is provided by the Ministry of Agriculture of the Slovak Republic to the government and then to the parliament on yearly basis. The report, containing every aspect related to agriculture in the Slovak Republic, is the base for decision making of government or parliament as the agricultural and other related activities are concerned. The Ministry's specialized institute - Research Institute of Economics in Agriculture and Food Industry is considerably involved in

statistical analysis including analysis of labor productivity. The Statistical Office of the Slovak Republic provides the government by "The Statistical Information on Basic Trends", on quarterly basiscontaining information on agriculture also. The Office in its publication range called Agriculture and Fishing presents yearly 10 independent publications analyzing concrete activities, for example selected indicators in agriculture structure of employees in agriculture, etc.

Summary

In conclusion it can be said, in the scope of development of Slovak economics in last ten years the decline of employment was the highest particularly in agriculture and also the level of wages of employees in this branch was the lowest one. Labor productivity, using various views and data looks different. For instance, by evaluation of labor productivity from revenues there was a priority growth of labor productivity before the growth of average wages. The Slovak government deals with the situation in agriculture every year (so called Green Report) and provisions for improvement are being adopted currently.