Mid-term projection of trends in macroeconomic development of Slovak health sector

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Introductory word

Material offered in this book was written up in 2001 - 2002 in the scope of labours devoted to research project TF026121-2 sponsored by the World Bank. In the material, authors summarize the outcomes of mid-term projection of trends in macroeconomic development of Slovak health care sector. The projection - very same as published here - was elaborated to meet the needs of the Ministry of health care of Slovak Republic.

Introductory chapters aim at analysing the health care system in Slovakia from the point of view of its administrative structure and financial flows. Further chapters introduce an econometric model based on which future macroeconomic development as a whole, and health care sector development in particular, are projected. Concluding chapters are devoted to different health care systems in European Union countries, most of all to health care sector in Great Britain. Comparing the various systems, authors offer several recommendations and advice the initiators of Slovak health care system reforms.

Analyses of past macroeconomic (as well as health care sector) development are based on data up to the year of 2000, meaning that the authors analyse health care system before the reform. Various alternative scenarios of calculated prognoses cover years 2001 - 2006, i.e. the period at the beginning of which Slovakia launched the health care system reform. As a matter of fact, it is necessary here to point out the high value of analyses published in this book as, looking at the problem in a broader macroeconomic context, they represented an important basis that conception of the reform could have built upon. Without these analyses it would have been very difficult to prepare such a complex change of the system and carry it finally out.

I believe that this publication can become a valuable source of information in the process of reviewing Slovak health care system reform not only in domestic but international context, too.

Rudolf Zajac

Minister of health care of SR

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Introduction

This work represents the final output of several reports elaborated by medical, prognostic and foreign author teams.

The first chapter is oriented on organizational design of Slovak health care system. The objective is to analyze an existing system of health care in Slovak Republic, its functioning, institutional structure, etc. It is also a starting point for identifying existing data sources and categories of available data from point of view of their reliability and periodicity. The analyses describe the period of 1993 - 2001 and are focused on following issues:

1. *Basic principles of health care system in SR*
2. *Fund-raising for health care system in SR*
3. *Basic principles of health insurance system in SR*
4. *Providers of services in health care system in SR*

The objective of the second part is to analyse financial flows in Slovak health care through a system of health accounts - an organic part of national accounts from 1993 to 2000. The second part is divided into six, mutually connected subchapters:

The first subchapter "Objectives of economic policy and macroeconomic development" concisely describes different attitudes toward economic policy through the time period of 1995 - 2000. At the same time, it introduces the health care system and its basic parameters as a part of the economy of Slovak Republic.

The second subchapter "Price system, mechanisms of payments and contractual relations" concentrates on the functioning of price mechanisms and their specifics in health care. It divides payment systems into input- and output-oriented and briefly describes the contractual relations.

The third subchapter "Structure of claims and liabilities" offers an analysis of claims and liabilities in the health care system separately for the sphere of financial mediators and separately for the sector of providers. However, attention is focused on detailed structuring of relations using the system of debits and credits.

The fourth subchapter "Redistribution mechanism" analyses two redistribution mechanisms. Despite the existing one is evaluated as fully operating, three weak points are identified. At the same time, this subchapter attempts to outline possibilities of correction of these drawbacks.

The fifth subchapter "Methods and procedures of accounting" examines in detail the

methodology of accountancy of health insurance companies and clearly specifies the most important drawbacks of existing system in two areas: drawbacks of the environment and drawbacks of the accountancy.

The sixth subchapter "Expenditures", with the help of national accounts, analyses the most important trends in health care. At first, system of health accounts in current prices is compiled. Next, an adjustment for price changes using deflators is attempted for and a system of health accounts in constant prices (prices as of 1995) is built. As a result, strong and coherent data base is produced via standard methodology of OECD. Such data has been absent to Slovak authorities in the process of building up policies and making decisions up to now.

The main goal of the third part is to uncover relationships among different subsystems, from which subsequent implications can be made useful for creation of prognostic model. It includes:

1. *Principles of functioning of out-patient and in-patient health care focused on flow of patients through the system*
2. *Methods of reimbursement of services and costs of health care establishments*
3. *Principles of drug prescription and reimbursement of drugs and medical aids*

The fourth part is focused on describing the ISWE01q4 model which was enlarged and actualized for the purposes of this project. Specifically, blocks of prices and deflators, labour market, population and foreign trade, monetary block, block of state budget and block of gross domestic product were updated. The model was enlarged by block of health insurance income. As the model is of an interdependent type, blocks are used to make the description of model clearer.

The fifth part is devoted to a brief description of development in years 1995 - 2000. This is useful for macroeconomic framework overview and development of health insurance system in past years. This part also contains definitions and descriptions of used time series.

The sixth part focuses attention on the projection of macroeconomic development of Slovak health system. In the first subchapter of this part, the trends in population growth in 2001 - 2006 are described. The methodology and data base are described, too. The second subchapter represents a general macroeconomic prognosis. Its background is specified at the beginning of this part. Macroeconomic forecast of health insurance system incomes (in the third subchapter) is based on the two aforementioned prognoses.

In the seventh and eighth parts, the development of health care system in European Union, and specifically in Great Britain, is described. Attention is focused on possible lessons for Slovak Republic.

1. Organisational design of health care system in Slovak Republic

The objective of this part is to analyze an existing system of health care in Slovak Republic, its functioning, institutional structure, etc. It is also a starting point for identifying existing data sources and categories of available data from the point of view of their reliability and periodicity. The analyses cover the period of 1993 - 2001 and are focused on following issues:

1. Basic principles of health care system in SR
2. Fund-raising for health care system in SR
3. Basic principles of health insurance system in SR
4. Providers of services in health care system in SR

Following data sources were identified and employed for the purpose of the analyses:

1. Health Statistics Yearbooks of the Slovak Republic (1993 - 2000*)
2. Reports directly accessible from Ministry of Health of SR, Institute of Health Information and Statistics, and health insurance companies
3. WWW resources from Ministry of Health of SR, Institute of Health Information and Statistics, and health insurance companies

1.1 Basic principles and structure of health care system in Slovak Republic

1.1.1 Legislation

Slovak health care system (SHCS) is governed by acts detailed in the Code of Law (Code). The most important acts are following ones:

Act No. 272/1994 of Code NR SR (National Council of SR) - on Protection of Citizens' Health. This act establishes rights and duties of governmental institutions, civic bodies, other juridical and natural persons, execution of governmental guidance and state health surveillance over protecting of citizens' health. Since January 1, 2001, this act came into

effect and novelized former act. Subject of the new act also comprises a complex protection of health against ionizing radiation.

Act No. 273/1994 of Code NR SR - on Health Insurance, Financing of Health Insurance, on Establishment of General Health Insurance Company (Všeobecná zdravotná poisťovňa) and Establishment of Professional, Industrial and Municipal Health Insurance Companies, subject to subsequent regulations (novelized up to 18 times). The act regulates the system of health insurance, its financing and legislative relationships within the system. This act was supplemented by several other acts: Act No. 151/1999, Act No. 233/2001, Act No. 242/2000, Act No. 448/2000, Act No. 280/1997 on Joined Health Insurance Company (Spoločná zdravotná poisťovňa), and Act No. 362/2000 of Code NR SR.

Act No. 277/1994 of Code NR SR - on Health Care, subject to subsequent regulations. This act defines and regulates providing of health care services, their management, rights and duties of natural and juridical persons engaged in providing health care services. This act was novelized for six times since 1994. **The Act No. 303/1998** of Code NR SR contains the former act and a complete list of subsequent amendments.

Act No. 98/1995 of Code NR SR - on Health Care Order, subject to subsequent regulations. This act regulates conditions and scope of health care services and provision of medical aids according to health insurance as well as partial or complete reimbursement of insured citizens. The act was changed by **Act No. 3/2000 of Code NR SR** substantially. Act 3/2000 changes and completes the former act on Health Care Order. The change is made in defining the conditions of providing drugs and medical aids on the basis of health insurance. The lists of specified drugs and medical aids as well as the levels of reimbursements on the basis of health insurance are defined directly by regulations of Government of SR.

Act No. 140/1998 of Code NR SR - on Drugs and Medical Aids, subject to subsequent regulations. This act regulates conditions for drug and medical aids treatment, testing and registration of drugs, approving of medical aids, and defines the role of governmental institutions in pharmacy.

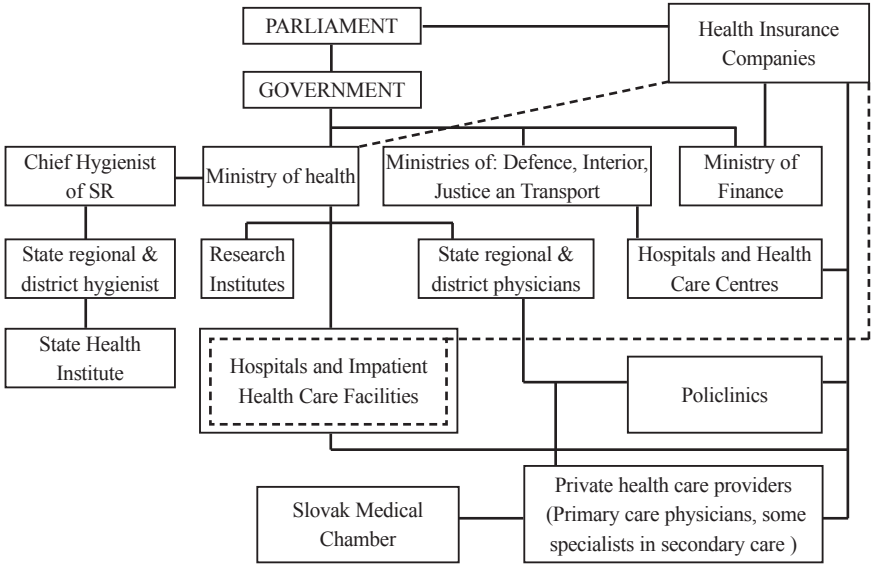
1.1.2 Organizational Structure of SHCS

Following levels exist within the structure of SHCS (see Chart 1.1):

- **Legislative bodies** - National Council of SR - 150 MPs
- **Executive bodies** - Government of SR, Ministry of Health, Ministry of Defence, Ministry of Interior, Ministry of Justice, Ministry of Transport, Post and Telecommunication, Chief Hygienist of SR

- **Financial bodies** - Ministry of Finance, Health Insurance Companies
- **Providers of health care services** - out-patient and in-patient facilities
- **Professional bodies** - i.e. Slovak Medical Chamber, etc.

Chart 1.1: Organisational structure of SHCS



Source: WHO HFA Database, 1999

Educational institutes were not incorporated to this scheme. Medical schools belong to Universities, hence are governed by Ministry of Education. Nursing schools are governed by Ministry of Health during examined period of 1993 - 2001.

1.1.3 Human resources

Table 1.1: Review of data available on employees in SHCS - number of employees registered in health care system - natural persons, data collected from Health Statistics Yearbooks 1991 - 2000

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	122 299	111 658	127 414	missing	108 715	96 935	106 368	118 735	116 158	120 773
Non-governmental							19 919	32 702	32 970	34 750

Table 1.2: Number of doctors governed by Ministry of Economy of SR and district bodies - calculated to full employments, data collected from Health Statistics Yearbooks 1991 - 2000

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Doctors	17 343	17 093	17 146	x	13 670	11 517	16 785	18 453	18 413	19 894

The number of employees prior 1998 was modified by extraction of people employed in spas. This fact disables exact comparison between annual data, moreover borders and structures of districts were changed following 1995.

Table 1.3: Comparison of selected groups of employees between 1993 and 2000

	Year 1993	Year 2000
Doctors	15.0 %	16.5 %
Pharmacists	1.8 %	2.0 %
Nurses and midwives	33.7 %	33.4 %
Laboratory employees, assistants and technicians	17.4 %	15.8 %
Other health personnel	2.7 %	1.3 %
Other personnel	29.4 %	31.0 %

** detailed information was published in Health Statistics Yearbook 1993 and 2000*

Drawing on former data it is possible to assume that ratio between health care personnel (HCP) and non-HCP remained relatively stable from 1993 to 2000 and it stands for 2:1 ratio. Percentage of the doctors increased by 1.5 %.

Table 1.4: Number of doctors and middle HCP in SR in 1999 due to establishments governed by Ministries

	Number of Middle HCP	Number of Doctors
Ministry of Health	38 619	10 080
Railways	462	254
Ministry of Defence	674	250
Ministry of Interior	190	91
Ministry of Justice	174	58
Total	40 119	11 154*

** Including data on Medical School of Comenius University in Bratislava - 421 doctors*
Source: "Selected Data on Health Care System in SR" (Institute of Statistics SR, 1999).

1.1.4 Demography

Demographic situation

Referring to data provided by Statistical Office of SR, there was the population of 5 402 547 inhabitants in Slovak Republic as of December 31, 2000, of which 2 626 061 (48.6 %) were males and 2 776 486 (51.4 %) females. The natural increase amounted to 2 427 people, the total increase was 3 890 people. The natural increase declined by 1 394 people in comparison to the previous year and the total increase decreased by an almost identical amount, i.e. 1 385 people.

Comparing with 1995, the natural increase decreased by 72.2 %, and with 1990,

Table 1.5: Age structure of citizens in SR as published by UZIŠ, as of December 31, 1992 and 2000

Age groups	**Information as of 31.12.1992 (on the left side) and 31.12.2000 (on the right side)**					
	Total number		Men		Women	
0	77 649	54 741	39 732	27 984	37 917	26 757
1-4	319 232	230 821	163 031	118 430	156 201	112 391
5-9	437 621	349 775	223 719	178 916	213 902	170 859
10-14	467 230	401 088	238 296	204 879	228 934	196 209
15-19	452 881	443 815	230 714	226 573	222 167	217 242
20-24	371 697	473 084	189 405	241 053	182 292	232 031
25-29	386 858	436 177	196 448	221 131	190 410	215 046
30-34	406 961	367 385	207 938	186 117	199 023	181 268
35-39	430 717	389 618	217 663	196 534	213 054	193 084
40-44	378 686	408 964	189 134	205 794	189 552	203 170
45-49	279 774	415 559	135 015	206 026	144 759	209 533
50-54	251 671	338 423	118 556	163 854	133 115	174 569
55-59	237 768	254 568	109 506	116 804	128 262	137 764
60-64	235 381	218 945	104 811	96 209	130 570	122 736
65-69	214 781	201 871	91 036	84 529	123 745	117 342
70-74	131 295	176 254	53 383	68 432	77 912	107 822
75-79	98 295	137 264	36 111	48 864	60 184	88 400
80-84	71 143	54 464	25 269	18 595	45 874	35 869
85-89		34 143		10 771		23 372
90-94		11 735		3 412		8 323
95-99		3 103		912		2 191
100+		750		242		508
85+	39 968	49 731	12 246	15 337	27 722	34 934

Total 1985	5 178 967	2 539 291	2 639 676
Total 1990	**5 310 711**	**2 595 913**	**2 714 798**
Total 1995	5 374 210	2 613 713	2 760 498
Total 2000	**5 402 547**	**2 626 061**	**2 776 486**
Difference 2000-1990	**91 836**	**30 148**	**61 688**

even by 90.4 %. As well as the previous year, there were only three regions - districts of Žilina, Prešov and Košice - where the number of live births exceeded the number of deceased. Structure of inhabitants of SR sorted by age groups in 2000 is detailed in Table 1.6.

As a consequence of constant decrease in child population during previous years, the continual increase of proportion of productive and especially post-productive age population appears. While in 1990 the proportion of child population was over 25 % (25.1 %), in 2000 it decreased to 19.2 %, i.e. by 5.9 percentage points. This results in an extension of average age of Slovak population, from 33.5 years (males 32.1, females 34.9) in 1990 to almost 36 years (males 34.4, females 37.5) in 2000. The ageing index reached 94.2 in 2000 (comparing with 69.3 in 1990), i.e. 94 people of post-productive age per 100 people of pre-productive age (more by 15 people of post-productive age in comparison with 1995 and more by 25 ones in comparison with 1990).

Table 1.6: Structure of inhabitants of SR

Sorted by productive age for year 2000	Total	% of column total	Men	Women
Pre-productive age	1 036 425	19.2 %	530 209	506 216
Productive age	3 389 829	62.8 %	1 763 886	1 625 943
Post-productive age	976 293	18.1 %	331 966	644 327
Fertile age	X	X	X	1 451 374

1.2 Fund-raising for health care system in SR

1.2.1 State budget for health care system of SR

Prior to 1989, model of central planning created resources amounting to 5 % of GDP for health care system. The socialist health care system was built on regional principle and aimed at accessible and payless health services for all citizens. Specifically, development of in-patient care facilities with extensive numbers of beds and complex service mix dominated, including health services provided by spas and health resorts.

Transformation process in SHCS that started following the change of political regime in 1990 and continued after the establishment of Slovak Republic in 1993 led to introduction of compulsory health insurance for all citizens of Slovak Republic with payless health care guaranteed by Constitution of SR. Conditions of health care were defined in specific law (The Health Care Order) for this purpose. System of complementary health insurance has not been introduced yet; hence the compulsory health insurance is a basic pillar of health care financing. Proportion of public finances for SHCS reached 90.1 % in 1999 (Table 1.7). Due to this value, SR ranks among countries with the highest proportion of public finances in health care system.

Period of 1993 - 2001 is specific of continually increasing expenditures on health care and increasing volume of liabilities of individual entities in SHCS. Expenditures on health care reached the sum of 40 bill. SKK and 50.7 bill. SKK in 1996 and 1999 respectively, which represented 7.5 % and 6.45 % of GDP. These values were higher than average values in other Central and Eastern European countries, where 5.3 % of GDP was an average. On the other hand, average values in countries of European Community were higher than those in SR.

Next 10 % of expenditures on health care were paid from different sources. Structural review of financial resources was referred to in the document "Analysis of financial resources for health care and their proportion on GDP (sources from Ministry of Economy of SR and

Table 1.2: Number of doctors governed by Ministry of Economy of SR and district bodies - calculated to full employments, data collected from Health Statistics Yearbooks 1991 - 2000

COUNTRY	PROPORTION, %	YEAR *
Luxembourg	92.3	1998
Czech Republic	91.8	1999
Slovak Republic	**90.1**	**1999**
Great Britain	84.2	1999
Hungary	76.5	1998
France	76.4	1998
Germany	75.3	1999
Poland	72.2	1999
Austria	71.6	1999

** Year of last available data* *Source: OECD HEALTH DATA 2000*

sources from health insurance companies)", from material of Ministry of Finance of SR submitted to negotiations of the Government of SR - Proposal of state budget for year 2002 (Appendix 1). The sources were subdivided into four groups, A - D.

Group "A" contained:

- Insurance fees for economically active insured citizens
- Insurance fees for state insured citizens
- Insurance fees for National Institute of Labour (Národný úrad práce)
- Other income from health insurance fees

Group "B" contained:

- Resources for Ministry of Economy of SR (MH SR) - from state budget, structured to resources for health care service establishments financed through health insurance system and others
- Incomes from "VPS" not specified
- "ŠFZ" - National Fund of Health - funded from state budget and structured to resources for health care service establishments financed through health insurance system and others
- Incomes from lotteries and games - structured to resources for health care service establishments financed through health insurance system and others
- Resources for health care in governance of other Ministries

Group "C" should contain:

- Income from privatization profits planned to cover liabilities. This group is least stable and despite the fact that it contains important volume of finance for year 2001 (representing about 10 % of approved budget) it is dependent on privatization of strategic public enterprises such as ST and SPP.

Group "D" was defined as:

- Contribution of citizens
- Funding of administrative funds. Planned contribution to resources for health care was 1900 mill. SKK in 2002.

1.3 Basic principles of health insurance system in SR

1.3.1 Legislation

In period of 1993 - 2001, health insurance system in SR was governed predominantly by Act No. 273/1994 of Code NR SR - on Health Insurance, Financing of Health Insurance, on Establishment of General Health Insurance Company (Všeobecná zdravotná poisťovňa) and Establishment of Professional, Industrial and Municipal Health Insurance Companies, subject to subsequent regulations. (The act was novelized up to 18 times.) The act regulates system of health insurance, its financing and legislative relationships within the system. The act was supplemented by following important acts: Act No. 151/1999, Act No. 233/2001, Act No. 242/2000, Act No. 448/2000, Act No. 280/1997 on Joined Health Insurance Company (Spoločná zdravotná poisťovňa), and Act No. 362/2000 of Code NR SR.

1.3.2 Collection of health insurance premiums

Health insurance system is a basic pillar of health care financing in SR. It was based on compulsory insurance for all citizens. Different groups of citizens contribute to health insurance as follows (data for 2001):

Economically active insured citizens (EAIC)	**71.6 %***
State insured citizens (from budget of MH SR)	**26.9 %**
National Institute of Labour (NIL) for unemployed	**1 %**
Self-paid insurance	**0.4 %**

**EAIC pay 4 % of their salaries to health insurance system. Their employers pay another 10 % for each employee from defined basis, i.e. salary.*

In 2000, monthly collected premiums for entire groups of insured citizens accounted as follows:

Premium for one state insured citizen	**283 SKK**
Premium for registered unemployed (NIL)	**370 SKK**
An average premium for one EAIC	**1152 SKK**

Data for 2000, MH SR

Premiums for state insured citizens were regulated by the law on state budget as follows in observed period of 1993 - 2001 (Table 1.8):

Table 1.8: Evolution of premiums paid for economically inactive insured citizens (EIIC)

YEAR	Premium in SKK	Calculation of premium value	Number of EIIC	Total in SKK
1994	34	13.7 % from 10 % of defined basis 2 450 SKK	3 338 235	1 361 999 880
1995	181	13.7 % from 54 % of defined basis 2 450 SKK	3 283 517	7 141 688 877
1996	269	13.7 % from 80 % of defined basis 2 450 SKK	3 215 737	10 361 876 391
1997	269	13.7 % from 80 % of defined basis 2 450 SKK	3 229 646	10 406 694 527
1998	270	13.7 % from 73 % of defined basis 2 700 SKK	3 241 200	10 502 538 149
1999	283	13.7 % from 76.5 % of defined basis 2 700 SKK	3 241 735	11 007 900 000
2000	283	13.7 % from 76.5 % of defined basis 2 700 SKK	3 247 891	11 029 838 000
2001	336	14 % of defined basis 2 400 SKK	3 234 053	13 039 700 000

** elaborated according to the law on state budget for years 1993 - 2001 Source: MH SR, 2001*

Group of state insured citizens covers first of all unemployed citizens that are not registered at National Institute of Labour, children, pensioners and all other economically inactive subgroups of citizens, such as women during maternity or students.

More detailed categorizing of state insured citizens can be found in Act No. 273/1994 of Code NR SR, in § 10 as follows:

The state reimburses health insurance for:

- Dependent children without own taxable income or income lower than 3 000 SKK
- Persons with pension allowances paid from pension guarantees of Slovak Republic and military pension rents according to specific amendments also if they are gainful themselves, or as co-operating persons if their income from such activities does not exceed 3 000 SKK
- Persons with pension allowances paid from pension guarantees of Czech Republic also if they are gainful themselves, or as co-operating persons if their income from such activities does not exceed 3 000 SKK

- Persons listed on a list of applicants for employment, not receiving material support
- Women receiving financial support in maternity from the date of child-birth
- Persons who personally care for a child aged up to 5 years daily and appropriately, or for a child with severe and long-term health disability aged up to 18 years, that requires an extraordinary care or especially demanding care and was not placed into an institute for such children with annual or weekly stay, if the women do not participate on health insurance from other reasons
- Persons who personally care for a relative person that is completely or severely weak or older than 80 years daily and appropriately, and such person was not placed into an institute of social care or similar health care establishment or into an institute providing social services according to specific amendments, if not participating on health insurance from other reasons
- Persons for whom a right for pension has not arisen due to care for a child or relative person and who are not gainful according to their age
- Soldiers in regular (substitute) military services and persons in substitute civil service without taxable income or income lower than 3 000 SKK
- Persons under execution of detention or imprisonment who are not gainful
- Persons who reached the age necessary for right for pension, however they do not comply with conditions for admission of pension and do not have any income from employment, from gainful activities of themselves, from capital proprieties, from renting out, or from other incomes defined in law on income taxation, or they do not receive a pension from abroad, or if their income from abroad does not exceed 3 000 SKK monthly
- Foreign citizens and persons without citizenship with status of refugees, if they are not employees, gainful active persons, or co-operating persons
- Persons who perform working activities for religious, monastic and charity societies and do not receive an income from mentioned or other activities
- Persons who are placed in establishments of social care or in establishments providing social services according to specific amendments with annual stay, if not participating on health insurance from other reasons
- Foreign students in order to fulfil obligations from international agreements and foreign students with acknowledged status of foreign Slovaks
- Persons without taxable incomes who receive allowances from social insurance or allowances from social care substituting the salaries, wages or rewards for work or income from performing gainful activities or activities of co-working persons after cessation of contribution on social insurance of employees, social insurance of

gainfully active persons and co-working persons or on social care in armed forces, if not participating on health insurance from other reasons

It is necessary to mention that system of collection of health insurance premiums planned and really reached significant deficit of 2 bill. SKK in 2000. Furthermore, this fact is important since the deficit of SHCS increased continually starting from 1996. It is remarkable that despite these facts the conditions for balanced economy in SHCS were not created.

Together with planned deficit that resulted from coincidence of different factors in SHCS, it is necessary to focus on costs of health care providers and methods of payment for delivered services what will be specified in other parts of this project. Table 1.9 specifies in detail expected genesis of cumulated deficit for year 2000.

Table 1.9: Selected items of health insurance in SR

ITEM	VšZP	SZP	Apollo	Dôvera	Sidéria	Total
Average number of insured	3 688 506	703 167	447 802	324 744	385 726	5 549 945
Revenues of HIC, in thousand SKK	22 119 838	4 118 190	2 341 413	1 650 325	2 049 689	32 279 455
Income per one insured/year	8024.88	7 808.88	6 682.68	6 672.36	6 878.64	7754.88
Expenditures per one insured/year	8031.72	6433.68	6 433.68	6 463.44	7 093.08	7 7683.00
Costs per one insured/year	8528.28	7047.00	7 047.00	6 381.48	7 317.24	8 8118.36
Incomes - Costs	-503.40	-364.32	-82.92	290.88	-438.60	-363.48
Expected deficit	1 856 793 920	58 306 608	163 143 225	94 461 535	169 179 424	2 017 294 009

Source: "Analýza hospodárenia systému zdravotnej starostlivosti a návrh opatrení na zlepšenie hospodárenia a finančnej situácie systému zdravotnej starostlivosti, MZ SR"; data for January to September 2000

The data show that the highest contribution to deficit (90 %) aroused from General HIC (VšZP) with the greatest insurance tree and its generally known unfavourable structure that covers a high percentage of economically inactive citizens.

Difference between costs and expenditures per one insured/year is interesting too since it varies significantly among HICs. Only Dôvera HIC reached higher expenditures than cost per one insured/year. The difference varies between values of 226 SKK (Sidéria) and 614 SKK (Apollo). Analysis of costs per insured in individual HICs and trends of these parameters in longer periods of time could help to explain some details about differences in data.

Collection of insurance premiums is governed by health insurance companies (HICs). The number of HICs varied from 14 to 5 during the period of 1993 - 2001.

Following HICs exist today:

- Všeobecná zdravotná poisťovňa - VšZP (General HIC)
- Spoločná zdravotná poisťovňa - SZP (Joined HIC)
- Zdravotná poisťovňa Apollo - CHZP Apollo (Apollo HIC)

- Zdravotná poisťovňa Dôvera - VZP Dôvera (Dôvera HIC)
- Zdravotná poisťovňa Sidéria - Istota - ZZP Sidéria - Istota (Sidéria -Istota HIC)

Financial resources collected from health insurance are allocated to four funds according to legislative amendments (Act No. 273/1994 of Code NR SR). The law defines the rules of formation and usage of these funds in so called health insurance budget.

1.3.3 Health insurance budget (HIB)

General HIC forms the HIB subdivided to:

- Basic fund
- Reserve fund
- Specific fund
- Administrative fund

HIB must be formed and executed in such manner that the expenditures do not exceed the revenues of General HIC in one fiscal year.

General HIC is obliged to submit a proposal of HIB for next calendar year to NR SR in time for submission of proposal of state budget and submit the balance sheet to NR SR in time for proposal of final state account (annual balance sheet). Viewpoints of Ministry of Health of SR and Ministry of Finance of SR are obligatory components of submitted proposal of HIB.

The structure of health insurance budget is the same for all HICs. Joined HIC, similarly to General HIC, submits both budget and annual balance sheet to Parliament for agreement. Resort health insurance companies submit their budgets to MH SR (Ministry of Economy of SR) and MF SR (Ministry of Finance of SR) according to the Act No. 273/1994 of Code NR SR.

Basic fund

Basic fund is formed from:

- Collected insurance premiums
- Collected extra charges to insurance premiums, fees from delays, penalties and fees for unfulfilled announcement duty

- Allocations from reallocations of collected insurance resources (§ 56, article 9)
- Received compensations spent on provided health care in consequence of responsible illegal action of third entities against the insured
- Received compensations from other insurance companies or legal entities for provided health care and services related to ensuring health care for their insured
- Interests from bank accounts
- Resources of financial support for overcoming the lack of resources in basic fund
- Subsidies from state budget
- Other revenues and donations, if the donor does not specify other method of use
- Profit from stocks after taxation

Basic fund is utilized for:

- Reimbursement of provided health care
- Reimbursement of provided health care and services related to ensuring health care for insured for other insurance companies or legal entities
- Transfers to reallocations of collected insurance resources (§ 56, article 8)
- Instalments of financial support to basic fund
- Coverage of fees for bank account and taxes from interests

General HIC may use the financial resources from basic fund to pay credits and related financial fulfilments resulting from credit contracts if these credits were used to cover health care expenditures, and to pay interests from returnable financial support provided by basic fund.

Reserve fund

Reserve fund is formed from:

- 0.5 % of collected insurance premiums from payers of insurance premiums
- 0.5 % of collected insurance premiums paid by state and National Institute of Labour
- Interests on bank account

Resources of reserve fund are utilized for reimbursement of:

- Extraordinary expenditures on health care unexpected in HIB if these expenditures exceed basic fund capacity or if substantial misbalance in continuity of basic fund utilization occurs

- Expenditures on health care exceeding the scale encoded by special amendments* up to 5 % of annual expenditures of basic fund
- Coverage of fees for bank account

** HIC may reimburse costs on health care according to point 2 if*

a) it reimbursed all expenditures on health care in scale encoded by special amendments

b) the sum of financial resources in all funds corresponds to level defined in Act No. 98/1995 of Code NR SR on Health Care Order

In calendar year, volume of financial resources in reserve fund cannot exceed one fourth of average annual expenditures from basic fund calculated from an average of last three calendar years.

Specific fund

Specific fund is formed from:

- 2 % of collected insurance premiums from payers of insurance premiums
- 2 % of collected insurance premiums paid by state and National Institute of Labour
- Donations and state specific grants
- Interests on bank account

Specific fund is utilized for:

- Coverage of increased expenditures in relation to provision of health care to groups of insured specified by General HIC with agreement of MH SR, and financing of extremely difficult health services defined by MH SR
- Coverage of increased expenditures in relation to provision of health care to individual insured in cases defined by governing board of General HIC
- Coverage of fees for bank account and taxes from interests

The governing board of General HIC decides on other utilization of specific fund for reimbursement of health care as mentioned in point 2, subject to agreement with MH SR.

Administrative fund

Administrative fund is formed from:

- Maximum of 4 % of collected insurance premiums from payers of insurance

premiums
- Maximum of 4 % of collected insurance premiums paid by state and National Institute of Labour
- Maximum of 4 % of gained compensations for provided health care in consequence of responsible illegal action of third entities against insured
- Interests of bank account
- Donations and other revenues designed for administrative fund
- Revenues from assets that were obtained from administrative fund
- Maximum of 4 % of extra charges to insurance premiums, fees for delay, penalties and fees for unfulfilled announcement duty
- Maximum of 4 % of reimbursements from other insurance companies or legal entities for provided health care and services related to ensuring health care for insured
- Specific deposit and interests from specific deposit

Administrative fund is utilized for:

- Coverage of costs related to management and activities of General HIC and its bodies and for assets procurement
- Instalments of credits and interests from credits
- Expenditures related to execution of Central Register
- Coverage of penalties set by bodies of state surveillance

Volume of collected insurance premiums for EAICs reached the sum of 28 973.8 mill. SKK in 1999 and 31 756.4 mill. SKK in 2000. Collected insurance premiums for insured by state amounted to 11 005.4 mill. SKK in 1999 and 11 063.9 mill. SKK in 2000. The ratio near 1:3 results from comparison of the sum of collected premiums for EAICs and those collected for insured by state. Nevertheless, the ratio between number of insured by state and EAICs was reversed, 3:1. This unfavourable ratio is distorted by reallocation process.

Economic activity is a decisive factor for level of insurance premiums. However, the age and gender are the factors that influence morbidity and consequent costs of health care predominantly. Distribution of insured based on demographical, social and economic differences among individual groups might allow differing and taking into account specific needs of whatever group. Structure of insured might be distributed on different criteria; nevertheless following grouping seems to be advantageous:

1. **Economically active insured citizens**
2. **Citizens insured by state and National Institute of Labour**
   a) *Economically inactive insured in productive age*
   b) *Economically inactive insured in pre-productive age*
   c) *Economically inactive insured in post-productive age*

1.3.4 Reallocation of collected insurance premiums

During 1993 - 2001, resources from collected insurance premiums based on compulsory insurance system were reallocated among HICs on principle of solidarity. The main reason was different structure of insured among individual HICs and the fact that General HIC covers those insured by state dominantly. Originally, reallocation system was established on principle of solidarity between EAICs and EIICs and resources were reallocated as follows:

60% of collected premiums from EAICs + state premiums + premiums from NIL

Such system allowed that HICs with higher proportion of EAICs and higher insurance collection rates transferred resources to reallocation and, vice versa, HICs with higher proportion of EIICs and lower collection rates received resources from reallocation system.

It was impossible to control the number and the movement of insured among individual HICs until 1999. This fact resulted in inappropriate registration of insured and problems with reimbursement of services provided to insured.

Legislative regulation valid since 1.7.1999 defined that the number of insured declared by Central Register had to be accepted for reallocation purposes. Total number of state insured older than 60 years was multiplied by coefficient 2.5. New formula for reallocation was introduced in order to regard new structure of and average costs for insured in individual HICs:

100 % of collected premiums from EAICs + state premiums + premiums from NIL and implemented indices for risk of costs of health care due to age and gender (1.7.1999)

Two HICs (Joined and Apollo HIC) transferred resources to reallocation system as a result of such regulation. On the other hand, General, Sidéria-Istota and Dôvera HICs received resources from reallocation system.

1.4 Health care providers in Slovak Republic

1.4.1 Structure of health care providers

There were 2 306 entities registered in health care network governed by MH SR at the beginning of 1993. The numbers were as follows (Health Statistics Yearbook of SR, 1993, UZIŠ):

Out-patient establishments (n = 1920), hospitals (n = 84), specialized institutes (n = 99), spas (n = 45), science and research institutes and other institutes governed directly by MH SR (n = 13), special establishments for children (n = 30), rescue service stations (n = 46), establishments of hygienic services (n = 40), departments for health education (n = 28), Institute of Health, secondary health schools (n = 33). Moreover, 77 establishments were registered in a section of railways health services in 1993.

According to data obtained from UZIŠ, there were 11 482 health care establishments registered in Slovak Republic as of December 31, 2000. 10 104 of them were out-patient establishments and 180 in-patient ones. Briefly summarizing, the following scheme maps the establishments within the health care system in Slovak Republic in 2000* :

Total number of entities:	11 528
1. Health establishments	11 482
1.1 O.w. for out-patient care	**10 104**
1.1.1 out-patient departments	8 817
1.1.2 first aid stations	29
1.1.3 agencies of nursing at home	89
1.1.4 rescue health services	3
1.1.5 specialized establishments of out-patient care	43
1.1.6 centres for dialysis	17
1.1.7 policlinics	59
1.1.8 solo establishments of common diagnostic and curative units	1
1.1.9 dental care establishments	1046
1.2 O.w. in-patient care establishments	**180**

** Elaborated according to Slovak version of data published in Health Statistics Yearbook of SR, UZIŠ, 2000.*

1.2.1 hospitals	95
1.2.1.1 hospitals of type II	4
1.2.1.2 hospitals of type III	2
1.2.1.3 psychiatric hospitals	6
1.2.1.4 hospitals with policlinic of type I	32
1.2.1.5 hospitals with policlinic of type II	36
1.2.1.6 hospitals with policlinic of type III	8
1.2.1.7 university hospitals	3
1.2.1.8 university hospitals with policlinic	3
1.2.1.9 university pediatric hospitals with policlinic	1
1.2.2 highly specialized professional institutes (HSPI)	13
1.2.2.1 HSPI for TB and respiratory diseases	5
1.2.2.2 HSPI for rehabilitation	1
1.2.2.3 HSPI for oncology	1
1.2.2.4 HSPI for cardiovascular diseases	1
1.2.2.5 HSPI for endocrinology	1
1.2.2.6 HSPI for rheumatic diseases	1
1.2.2.7 HSPI for preventive and clinical medicine	1
1.2.2.8 HSPI of geriatrics	1
1.2.3 special health institutes (SHI)	23
1.2.3.1 SHI for TB and respiratory diseases	5
1.2.3.2 SHI for rehabilitation	4
1.2.3.3 SHI for chronic diseases	2
1.2.3.4 centre for drug addiction treatment	3
1.2.3.5 geriatric centre	1
1.2.3.6 rehabilitation institutes for children	6
1.2.4 institutes for treatment	16
1.2.4.1 institutes for long-term treatment	10
1.2.4.2 psychiatric treatment institutes	5
1.2.4.3 psychiatric treatment institutes for children	1
1.2.5 balneo-therapy establishments	33
1.3 Public health institutes	**39**
1.4 Pharmacy-like establishments	**1 159**
1.4.1 pharmacies	1 031
1.4.1.1 hospital pharmacies	66
1.4.1.2 public pharmacies	965

1.4.2 medical accessories supply points	128
1.5 Other health establishments in health care system	**43**
1.6 Educational institutes	**32**
1.6.1 paramedical high schools	31
1.6.2 institute for postgraduate education	1
1.7 Other establishments in health care system	**11**
1.7.1 information centre	1
1.7.2 establishments for drug production	5
1.7.3 establishments for pharmaceutical and medical accessories delivery	4
1.8 Other bodies and organizations in health care services	**3**

According to described data, number of entities within the network increased more than four times from 1993 to 2000. Besides relatively stable number of hospitals the number of out-patient ambulatory establishments increased by 6 900. Despite the fact that the numbers of pharmacies were incomparable, they probably increased due to privatization during the period of 1993 - 2000 and establishment of new pharmacies in private sector.

1.4.2 Employees

This paragraph is aimed at a review of total number of employees during the last three years of observed period, i.e. 1998 - 2000 (Table 1.10 a - c). Situation in individual districts of SR is expressed as that of December 31. Prior to 1998, number of employees was modified

Table 1.10a: Review of total number of employees in SHCS in 1998, by districts

BA	TT	TN	NR	ZA	BB	PV	KE	SR
20 769	10 755	10 872	12 669	13 950	15 152	17 473	17 093	118 735
17.5 %	9.1 %	9.2 %	10.7 %	11.7 %	12.8 %	14.7 %	14.4 %	100 %

Table 1.10b: Review of total number of employees in SHCS in 1999, by districts

BA	TT	TN	NR	ZA	BB	PV	KE	SR
20 494	10 710	10 026	12 404	13 655	14 939	17 060	16 872	116 160
17.64 %	9.22 %	8.83 %	10.67 %	11.76 %	12.86 %	14.68 %	14.52 %	100 %

Table 1.10c: Review of total number of employees in SHCS in 2000, by districts

BA	TT	TN	NR	ZA	BB	PV	KE	SR
22 543	10 623	10 357	12 691	14 610	14 880	17 488	17 581	120 773
18.7 %	8.7 %	8.6 %	10.5 %	12.1 %	12.3 %	14.5 %	14.6 %	100 %

** **BA** = District of Bratislava; **TT** = District of Trnava; **TN** = District of Trenčín;*
*__NR__ = District of Nitra; **ZA** = District of Žilina; **BB** = District of Banská Bystrica;*
*__PV__ = District of Prešov; **KE** = District of Košice, **SR** = Slovak Republic.*
(Elaborated according to Health Statistics Yearbooks 1998 - 2000, UZIŠ)

by separation of employees in spas and balneo-therapeutic institutes, which makes a direct comparison of appropriate data impossible. Furthermore, borders and administration of districts were organized in a different way till 1995.

1.4.3 Doctors

17 420 doctor posts were registered in SHCS at the beginning of 1993. 55 % of them were within out-patient care, 28 % within in-patient care and 1.9 % for hygienic services (Health Statistics Yearbook 1993, UZIŠ). The index of 32.82 doctor posts per 10 000 inhabitants was registered. In railways health services, 242 doctor posts were registered, which accounted for 1.4 % of total doctor posts in SHCS.

On December 31, 2000, the number of doctor posts in SHCS reached value of 19 894 (increased by 14 % compared to data of 1993). 11 666 doctor posts were registered in public health establishments and 8 728 posts in private health establishments. Index per 10 000 inhabitants increased by 12 % when compared to that of 1993 and reached value of 36.82 doctor posts per 10 000 inhabitants. In 1999, the data showed that 19.20 doctor posts per 10 000 inhabitants were in out-patient care, 10.52 doctor posts per 10 000 inhabitants in hospital in-patient care and 3.1 doctor posts per 10 000 inhabitants in other services.

Table 1.11a: Review of doctor posts in SHCS in districts of SR in 1998

BA	TT	TN	NR	ZA	BB	PV	KE	SR
3 400	1 489	1 700	2 092	2 157	2 265	2 422	2 927	18 453
18.4 %	8.1 %	9.2 %	11.3 %	11.7 %	12.3 %	13.1 %	15.9 %	100 %

Table 1.11b: Review of doctor posts in SHCS in districts of SR in 1999

BA	TT	TN	NR	ZA	BB	PV	KE	SR
3 368	1 515	1 662	2 081	2 177	2 236	2 433	2 942	18 413
18.3 %	8.2 %	9.0 %	11.3 %	11.8 %	12.2 %	13.2 %	16.0 %	100 %

Table 1.11c: Review of doctor posts in SHCS in districts of SR in 2000

BA	TT	TN	NR	ZA	BB	PV	KE	SR
4 135	1 533	1 740	2 188	2 386	2 273	2 505	3 134	19 894
20.8 %	7.7 %	8.7 %	11.0 %	12.0 %	11.4 %	12.6 %	15.8 %	100 %

** **BA** = District of Bratislava; **TT** = District of Trnava; **TN** = District of Trenčín;*
__NR__ = District of Nitra; __ZA__ = District of Žilina; __BB__ = District of Banská Bystrica;
__PV__ = District of Prešov; __KE__ = District of Košice, __SR__ = Slovak Republic.
(Elaborated according to Health Statistics Yearbooks 1998 - 2000, UZIŠ)

Data show that the highest number of doctor posts was in the District of Bratislava and District of Košice; District of Prešov ranked at the third place. The lowest number was in the District of Trnava and District of Trenčín (as of 31.12.1999).

Data show that the highest number of doctor posts was in the Districts of Bratislava and Košice; Prešov ranked at the third place. The lowest number of doctor posts was in the Districts of Trnava and Trenčín. The number of doctor posts in Bratislava increased by 735 posts since 1998 and this value expressed more than 50 % of total increase in doctor posts in whole SR within observed period of 1998 - 2000.

Number of doctor posts in establishments governed by other Ministries (other than MH SR) was on 31.12.1999 registered as follows:

Railways health services	252 doctor posts
Ministry of Defence of SR	275 doctor posts
Ministry of Interior of SR	99 doctor posts
Ministry of Justice of SR	63 doctor posts
Total number except MH SR	689 doctor posts

Source: "Vybrané ukazovatele zo zdravotníctva SR", 1999, Statistical Office of the SR.
Significant differences for years 2000 and 2001/related to 1999/ are not expected.

1.4.4 In-patient bed capacity

In-patient bed capacity of SHCS amounted to 63 517 beds at the beginning of 1993, beds within railways health services included. Railways health services managed 216 beds, which stood for 0.34 % of total in-patient bed capacity in SHCS (Health Statistics Yearbook 1993, UZIŠ). Data on in-patient bed capacity within Ministry of Defence of SR, Ministry of Interior of SR, Ministry of Justice of SR and railways health services were published and accessible in 1998 and 1999 and will be detailed later (Statistical Office of SR, July 2000).

On December 31, 1999, total number of in-patient beds in SHCS was 57 841, i.e. 91 % of those in 1993. 44 577 beds (77 %) were in public establishments and 13 264 beds (23 %) in private establishments. These data reflect situation in establishments governed by MH SR.

In 1999, 35 709 beds of total capacity of 57 841 beds were registered in hospitals, i.e. 61.7 %. According to "Prehľad o posteľovom fonde a jeho využití v SR", 4 418 beds were registered in departments of surgery, i.e. 12.4 % (UZIŠ, 2001). Table 1.12 shows evolution of in-patient bed capacity in hospitals of SR during the period of 1993 - 2000.

Data show an approximate 20 % reduction of bed capacity in hospitals governed by MH SR. Occupancy rates varied between 69.5 % in 1999 and 79.5 % in 1996. Generally, it seems that during the period of reimbursement based on in-patient day (paid for length of stay) the

Tab 1.12 Evolution of in-patient bed capacity in hospitals of SR within 1993-2000

Data	Year							
	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Number of beds	41 926	37 962	40 439	40 338	39 096	35 999	35 709	33 616
Occupancy rate	73.4	76.6	79.3	79.5	78.4	77.9	69.5	70.8
Per 1 000 inhabit.	7.9	7.1	7.5	7.5	7.3	6.7	6.6	6.2

Source: "Prehľad o posteľovom fonde a jeho využití v SR" ("Review of in-patient bed capacity and its utilization in the SR"), ÚZIŠ Bratislava, 2001, data for establishments governed by MH SR

occupancy rates were higher than in 1999 and 2000 when prospective budgeting method of reimbursement existed. (These issues will be addressed in more detail in Part II within economic analyses).

More detailed insight to this field and also different data for years 1998 and 1999 were published in "Vybraté ukazovatele zo zdravotníctva SR 1999 (Selected issues of health care system of SR 1999)" by Statistical Office of SR in 2000. Data on in-patient establishments, according to mentioned publication, in 1998 and 1999 were as follows:

Firstly, in 1998, total number of beds in health establishments was 60 929, of which 38 254 beds were in hospitals, 37 508 beds in public hospitals and 746 beds in private hospitals. 7 276 beds were registered in 75 specialized public institutes and 360 beds in 8 specialized private institutes. Next 394 beds was in 2 public spa institutes and 12 320 beds in 58 private spas. In 1999, the number of beds in system decreased to 60 169 beds, i.e. minus 760 beds compared to 1998.

Secondly, beds in establishments governed by other Ministries (other than MH SR) were included to total number of 60 925 beds in 1998.

a) Railways health services registered 217 beds in 2 hospitals.
b) Ministry of Defence of SR registered 913 beds in 3 hospitals, next 180 beds in specialized institutes (n = 1) and 245 beds in 2 spa-institutes. Totally, Ministry of Defence of SR registered 1 338 beds in 6 establishments.
c) Ministry of Interior of SR registered 441 beds in establishments except those governed by district and regional institutes. 60 of 441 beds were in one hospital and 381 beds were in spa institutes.
d) Ministry of Justice of SR registered 329 beds in 5 establishments.
e) Total number of 2 328 beds was registered by other Ministries, i.e. 3.9 % of total in-patient bed capacity of SHCS.

Significant differences in in-patient bed capacity in establishments governed by other Ministries are not expected in 2000 and 2001. However, there is an objectively detectable trend to reduce number of beds and utilize the in-patient bed capacity more efficiently in establishments governed by MH SR. Data show that certain reserves might exist in in-patient bed capacity with occupancy rates below 80 %.

2. Economic analysis

The objective of this part is to analyse financial flows in Slovak health care system, using the system of health accounts that form an organic part of national accounts from 1993 to 2000.

The entire part two is divided into six mutually connected subchapters.

2.1 Objectives of economic policy and macroeconomic development

The aim of this subchapter is not the delivery of an exhaustive analysis of economic policy and macroeconomic performance of the Slovak Republic. This part attempts to highlight concisely the development of those crucial macroeconomic indicators that serve as input for following analyses in the area of health care and that influence the results of these analyses. First of all, those are the indicators of gross domestic product, price indices (deflator, index of consumer prices, index of producer prices) and exchange rate.

2.1.1 Orientation of economic policy and economic growth

The time period of 1995 - 2000 was characteristic of the change of two different attitudes toward the economic policy. During the first phase (1995 - 1998), economic policy was based on relatively strong state interventions into economy. The representatives of economic policy, in the effort to increase the dynamics of economic growth, made use of the instruments supporting the domestic demand. The policy was based on extensive public investments and, generally, on expansive financial policy. Such a support of growth seemed to be appropriate until production capacities, which stayed unused in the previous period of transition depression, could have been put into effect. In fact, from the beginning of existence of independent Slovak Republic, reforms which were necessary for creation of functioning business environment and functioning markets were slowed down or completely stopped. Expansive fiscal policy of the government was not sufficiently co-ordinated either with monetary policy of the central bank (they rather were in contradiction) or with steps in the transition process and with development of competitiveness of domestic producers.

As a consequence of this policy, economic growth rate was positive. On the other hand, financial results of enterprises were unfavourable, distortions (price distortions and structural

distortions) deepened, private investment was pushed out by public investment (displacement effects) and macroeconomic equilibrium worsened (deficits of public budgets and deficit on the current account of balance of payment, increasing foreign debt, pressures to the exchange rate of the domestic currency).

From the point of view of utilisation of GDP, during the first period (in connection with the focus on economic policy), domestic demand - namely increasing grossed fixed capital formation - was the driving force of economic growth. Domestic demand increased by higher rates in comparison to the growth rate of GDP. Regarding the structure of created GDP, what is surprising is the intense growth of service sector, especially non-market services, dynamics of which is important for assessing the development in heath care sector (created GDP in non-market services expanded in 1996 and 1997 - see Table 2.1).

Table 2.1: Development of total GDP and created GDP in non-market services

Indicator	1995	1996	1997	1998	1999	2000
GDP in current prices (billion SKK)	546.0	606.1	686.1	750.8	815.3	887.2
Index of GDP growth in current prices (previous period = 100)	117.1	111.0	113.2	109.4	108.6	108.8
Index of GDP growth in constant prices (previous period = 100)	106.7	106.2	106.2	104.1	101.9	102.2
Created GDP in non-market services in current prices (billion SKK)	63.4	74.2	94.0	101.2	101.7	106.1
Index of growth of GDP in non-market services in current prices (previous period = 100)	n.a.	117.0	126.7	107.7	100.5	104.3
Index of growth of GDP in non-market services in constant prices (previous period = 100)	n.a.	119.1	116.6	96.1	99.4	101.5

Source: Statistical Office of the Slovak Republic

During the second time period (1999 - 2000), correction of economic policy took place together with the change of government. The new government brought evidence on unsustainable model of economic growth and declared the so-called phase of stabilisation for years 1999 - 2000 during which the macroeconomic equilibrium should have been achieved. This period should have been followed by development phase, concentrated on recovery of economic growth but based on new principles. In addition to standard measures aimed at recovery of macroeconomic equilibrium (constraint of effective demand, introduction of anti-import measures, effort to practise more saving fiscal policy, changes of exchange rate regimes, wind-down of price deformations), the government declared more liberal economic policy with support of classical liberalism and institutionalism. Maintenance of future economic growth and equilibrium and increasing competitiveness should have been supported by a series of deep economic reforms, from which some were realised, however many of them were stuck in because of the stagnated reform resolution of the government.

This was given by the political limits of heterogeneous government coalition, which had variety of values and priorities, and by the limited social acceptance of some reforms.

Growth of GDP in the second period clearly slowed down in comparison to the period of 1995 - 1998, although no minus values of growth rate were registered. Decisive driving force of the growth on the part of utilisation of GDP changed - foreign demand, side by side with subdued growth of domestic demand, became the one. Along with deceleration of GDP growth, improving results of net export (export of goods and services minus import) were registered, which was the consequence of recovery of economic growth in economies of decisive business partners and ease-off of domestic demand (meaning lowering import dynamics). From the point of view of created GDP, intense growth in non-market services was replaced by stagnation, while production in agriculture, industry and market services increased over-proportionally (in relation to GDP). Marked decrease in GDP growth was noticed in construction, which was the result of slow-down in public investments, bringing about also slow-down in building public infrastructure. In 2001, process of deterioration of trade balance began, due to domestic supply restructured insufficiently in comparison to the recovery of domestic demand.

2.1.2 Development of exchange rate and price indices

Development of exchange rates was considerably influenced by the aforementioned changes in economic policy. Exchange rates evolved under the regime of fixed exchange rate till September 1998. This regime was kept in operation in spite of growing pressures. Namely at the end of the period, fixed regime was maintained by the central bank only at the expense of high costs and frequent interventions at exchange markets. Inadequate holding to the regime of fixed exchange rate (with a certain fluctuation band) caused real appreciation of Slovak crown and decreased the competitiveness of domestic producers on foreign and domestic markets. After floating regime of exchange rate was adopted in October 1998, the exchange rate reacted to the long-lasting external disequilibrium and the price of Slovak crown decreased in comparison to other currencies (Table 2.2). Following that, the exchange rate of Slovak crown in relation to the reference currency EURO stayed at the same level and

Table 2.2: Characteristics of the exchange rate development

Indicator	1995	1996	1997	1998	1999	2000
Exchange rate SKK/USD (annual average)	29.74	30.65	33.62	35.24	41.42	46.20
Exchange rate SKK/XEU resp. SKK/EUR (annual average)	38.45	38.40	38.01	39.60	44.12	42.59

Source: National Bank of Slovak Republic

the devaluation in relation to the USD continued (at that period of time, the USD had revaluated).

Price development was characteristic of relatively low rate of inflation (relatively low compared to other transition countries), which was achieved thanks to postponed recovery of distorted and regulated prices. The increases of regulated prices, increases of indirect taxes together with the price increases of strategic raw materials in the world markets, accompanied by USD revaluation (bringing about increasing import prices), led to the growth of inflation rate in years 1999 - 2000. Increasing price level contributed to temporary limitations in purchasing power growth and, by that, to slow-down in domestic demand during the period of macroeconomic stabilisation. For the purpose of our analyses, among the indicators of price level movement, the development of deflators of GDP, and especially deflator of GDP in non-market services, is of the utmost importance. Table 2.3 reveals that the development of deflator of GDP in non-market services was considerably different from the development of consumer prices and from the total deflator of GDP. In 1996, decrease of production prices in industries of non-market services took place; in 1997 and 1998, the price indices of non-market services outrun other price indices. In 1999 and 2000, the increase of prices of non-market services was only moderate and contributed to the slow-down of the increase in the total GDP deflator.

Table 2.3: Characteristics of price development

Indicator	1995	1996	1997	1998	1999	2000
Index of consumer prices (previous period = 100)	109.9	105.8	106.1	106.7	110.6	112.0
Deflator of GDP	109.7	104.5	106.6	105.1	106.6	106.5
Deflator of GDP in public services	n.a.	98.2	108.7	112.1	101.1	102.8
Deflator of GDP in other industries (without non-market services	n.a.	105.5	106.4	104.1	107.4	107.0

Source: Statistical Office of the Slovak Republic

2.1.3 Deflators of GDP components

Deflators arise as ratios of growth indices of a particular part of GDP in current prices to growth indices in constant prices. They are the indicators of price level changes, but of different expressive power than the indicator of inflation (measured by consumer price index). As long as the standard way of measuring inflation is based on the basket of consumer goods, it is possible to express deflators for any arbitrarily chosen segment of created and utilised GDP. Deflator of GDP in non-market services, which is used in the process of adjustment of data in the health care service to the unique price level, is the ratio of the

growth rate indices of GDP in non-market services in current and constant prices (sources of data are in Table 2.1). This type of deflator is chosen on purpose, because it reflects only the changes in prices in particular industry, of which the health care is a part. If consumer goods price index or the total deflator of GDP was used instead, it could have led to considerable deformations of the results in the process of health care data conversion to the unique price level, since development of prices in this specific industry (non-market services) is determined by different factors than other parts of economy are. Prices in this industry are considerably influenced by governmental policy while market impulses have limited influence on price changes. Although use of GDP deflator in non-market services is not absolutely accurate (other activities besides health care are included in the non-market services), it is considered a more convenient alternative than the use of another price indices (just because of the differences included in Table 2.3).

2.1.4 Position of health care in the economy

Health care expenditures gradually decrease, in spite of their continual nominal increase in comparison to the GDP after an important increase in 1996 (increase in current prices from 6.1 % to 7.2 % of GDP). In constant prices (prices as of 1995), health care expenditures decreased after reaching the highest level in 1996 and slowly increased to reach the level of 1996 (45.6 billion Slovak crowns) in 2000. Taking the aforementioned strong growth rate of real product into account, the ratio of health care expenditures to the GDP in real terms decreases as well but not that dramatically as in the nominal terms. During the whole time period (with the exception of 1966 - the GDP deflator in non-market services reached level lower than 100), it is obvious that the product exceeded the health care expenditures.

Table 2.4: Comparison of health care expenditures and GDP in current and constant prices

Indicator	1995	1996	1997	1998	1999	2000
GDP in current prices (billion SKK)	546.0	606.1	686.1	750.8	815.3	887.2
Health care expenditures in current prices (billion SKK)	33.1	43.6	48.6	51.4	54.0	56.8
Share of health care expenditures in GDP, in %	6.1	7.2	7.1	6.8	6.6	6.4
GDP in constant prices of 1995 (billion SKK)	546.0	579.9	615.9	641.1	653.3	667.7
Health care expenditures in constant prices of 1995 (billion SKK)	33.1	44.3	45.5	43.0	44.6	45.6
Share of health care expenditures in GDP, in %	6.1	7.6	7.4	6.7	6.8	6.8

Sources: Statistical Office of SR and appendices of this analysis (Table 5 in the system of health accounts in particular years)

The share of health care expenditures in created GDP (in real terms oscillating between 6.1 % and 7.6 %) does not definitively consider the rate by which the health care contributes

to the creation of the product. Creation of the product computed by income method enables only rough estimates. If the value added is expressed as the sum of wages, profits and depreciation allowances, than the rate by which the health care contributes to the creation of the product can be assessed being at a level between 2.5 % and 3.5 %.

2.2 Price system, mechanisms of payments and contractual relations

The main objective of this subchapter is to analyse price systems, payment mechanisms and contractual relations among owners of resources, providers of health care services and creator of the rules of game in the period of 1995 - 2000.

2.2.1 Deformations caused by regulated prices

Although the crucial step of starting economic transition was represented by the change of rules within the price setting (price liberalisation), the area of prices belonged in the later phases of transition to the areas characterised by many unsolved problems and imperfect reforms. It is hardly possible to doubt that direct governmental interventions into price setting imply deformation of the allocation mechanisms of the economy. Prices in such a case can not fulfil their basic function - to deliver the information about the relative scarcity of goods.

In the deformed price structure of the former centrally planned Czecho-Slovak economy, according to later analyses, relative prices of rents, fuels, energies and health care services were exceptionally low. After the first liberalisation measures from the beginning of the transition, the correction process of price deformation was stopped just in the areas that were, already in the planned economy, characteristic of extraordinarily low and deformed relative prices. More active manner of solving regulated prices was chosen from 1999 onwards. Up till now, it has meant only the alleviation of price deformations and not the systemic solution of this problem (it also asks for the changes in rules of functioning industries with the regulated prices). During this whole period, prices represented the instrument of social policy.

After the price liberalisation in 1991, there simultaneously existed area of economic activities with liberalised prices and a small area of activities with regulated prices in the Slovak Republic. Just then the long-standing unsolved system of price regulation showed its deformation influence on the regulated part of the economy (the activities of single regulated enterprises) and on the unregulated (major) part of economic activities as well.

Regarding the regulated part of the economic system, motivation failures represent probably the most important defects of practical price regulation system. It must be admitted

that these failures could happen also when the contemporaneous price deformations are corrected and the regulation is performed by "independent" office setting the prices according to the rules of "proportionate" costs and "proportionate" profits of regulated enterprise. These failures necessitate the construction of extraordinarily capital-intensive investments (if the "proportionate profit" creating the integral part of the price in regulated enterprise includes the guaranteed "proportionate profit" from used capital, the regulated enterprise tends to make use of most of capital and realise the capital-intensive investments), the realisation of excessive amount of investments (because of the asymmetric allocation of investment risks on the part of consumers. At the competitive markets, investors bear the losses from unsuccessful investments. Because of the competition pressures, investor can not allow himself to transpose the expenditures of such unsuccessful investment into prices. However, threats of regulated environment are that increased costs of investments tend to be included into the "proportionate costs" and, via that, into prices. At the competitive market, future estimated prices of production determine the actual amount of investment. Regulated market threatens by opposite decision process - price accommodates to the costs of investment projects.) and, last but not least, to the insufficient motivation of the management to produce under the conditions of minimal costs.

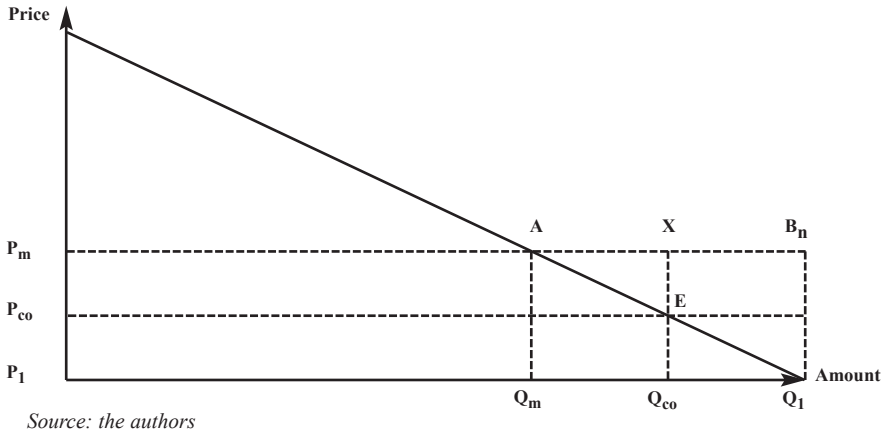
Non-regulated part of the economy is connected to the regulated part on the basis of input-output interrelations. This part of the economy gains the inputs from the regulated part. Artificially low maintained price of an input causes the growth of such activities that are this-input-intensive ones (for example, low prices of energies can contribute to pushing the production structure towards energy-intensive activities). As a matter of fact, some traditional production inputs (typical example being energy) are artificially cheap while other, substituting and more progressive inputs (human capital, new and economising technologies) are relatively expensive. If possibility of substitution between production inputs exists, priority is given to those ones that are relatively cheaper (regulated) and the obsolete and often ecologically unsuitable structure of production is preserved. Relatively high price of progressive production factors (indispensable for the orientation towards so-called dynamic comparative advantages), in comparison to traditional (regulated) production factors, can be considered one of the co-operating elements of the insufficient structural changes in the Slovak economy.

2.2.2 Price system in health care

Price system of health care (as a regulated system) is from the point of view of definition

of prices very complicated one. Price setting, in the sense of prices of delivered services and performances, is replaced by the system of settlements (payments), whereby deformations of price mechanism are corrected by the optional methods of informal payments. The system of settlements corresponds to the price regulation where settlement is understood as the payment going from the health insurance company (or from another owner of resources) to the provider of health care services or to the doctor for incurred services (performances). Settlement can be defined also as the payment to the hospital or to the other provider of health care services, which equals to the expenses of this institution or an individual.

Schema 2.1: Price mechanism in health care



Source: the authors

The point A expresses maximum useful price Pm that the consumers are willing to pay for a given health care service (performance). At the price Pm, the amount of delivered services Qm corresponds to the utility expressed by the price Pm.

The point Q1 expresses the consumption of health care performances (services) at the zero price of health care performances (services). At the zero price P1, the demand increases incessantly and the amount of asked-for and often delivered services is maximum - Q1.

The space between the price expressing **maximum utilisation of performance (Pm)** and **zero price (P1)** expresses the manoeuvring space for settlement (towards providers) and sharing of patient - in this case the correction on the part of price arises. The space between the **useful amount Qm** and **maximum amount Q1** offers the manoeuvring space for the rationalisation of delivered services from the point of view of their quantity.

Sensible use of manoeuvring space has important consequences. If the price of performance (or service) is corrected by sharing of the patient (co-payment) Pco, then the

amount of delivered services proportionally decreases to Qco. From the point of view of effects on health care, implementation of additional charges does not have any large effect on the revenues; however, it has important saving effect on expenditures, which is the basic precondition of balanced economy under limited resources.

The **area ABQ1** expresses the loss of health benefit resulting from increased consumption of health care performances and services from the amount Qm to the amount Q1. Similarly, the **area AXE** expresses the loss of health benefit resulting from increased useless consumption of services from Qm to Qco.

The **area QmQcoEA** denotes the excessive (but useless) benefit gained from excessive consumption of health care performances (services).

The **area Q1BXE** depicts non-realised costs, i.e. it depicts savings of limited financial resources that do not have to be expended on useless services.

The **area Q1QcoE** represents non-realised health benefit, as well as additional amount of services that are delivered to the patient.

The mechanism of price setting remains an important question of the regulated price system. Price setting is not created by preferences of patients and by expectations of providers but by the price centre, in the case of health care performances being represented by the Ministry of Health Care of SR and the Ministry of Finance of SR. Market of informal payments, which is the substitute of non-functioning relations between demand and supply, is the important rectifying instrument of the deformations of the allocation mechanism (for example, situation when the payments do not cover the costs).

2.2.3 Payment mechanisms

While the notion "settlement" corresponds to the monetary expression of the level of payment (how much?), the notion "payment mechanism" expresses the technical aspect of the process (how?). There are two basic groups of payment mechanisms:

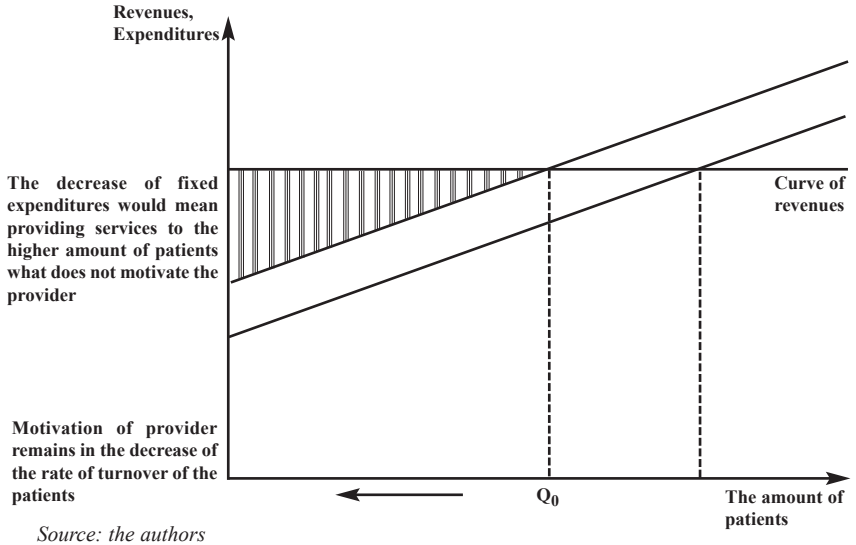
1. **input-oriented** (patient should go where financial resources are allocated)
2. **output-oriented** (financial resources should come where patient goes)

Input-oriented system of payment mechanisms is characteristic of strong focus on the function of accessibility and readiness under conditions of unstable amount of patients, of firm ties to funding of basic tasks (not performances and services) and of preferring fixed of one year (of one month, respectively) budgets and managerial plans.

From the point of view of economic policy, it is extraordinarily popular (it enables very good control of expenditures on health care), however, it has its own serious macroeconomic consequences. The first one is the intentional tendency towards lowering rate of turnover of patients because the settlements do not depend on amount of patients. The second one is the decrease of volume of production, which is a reaction to insufficient motivation and unconcern on the part of fund-holder. The third consequence, this time a positive one, is reduction of some types of costs.

Among the most used input-oriented payment mechanisms, there are namely purpose-freezing and fixed global budgets, as well as technically non-mastered perspective and retrospective budgets. The typical example of input- oriented payment mechanism is the fixed month salary (independent of the amount of patients and quality of work). Another example is capitation, when the provider is paid for its readiness to treat not for the really accomplished work.

Schema 2.1: Price mechanism in health care



Source: the authors

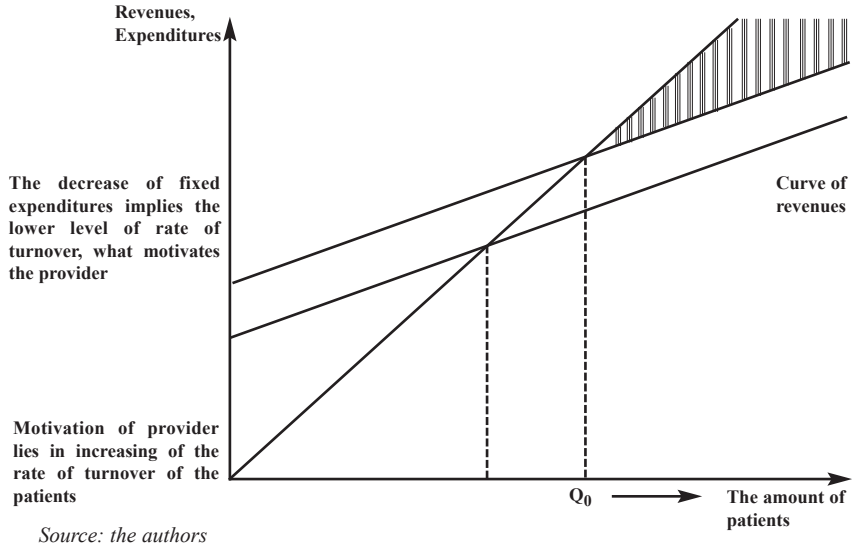
On the other hand, output-oriented system of payments is characteristic of strong ties to the accomplished performance (service) by relatively high amount of elements of the total sum of payment, while the capacity of provided services is limited by the fiscal capacity of fund-holder.

Macroeconomic consequences manifest themselves mostly in the field of increasing number of patients as a reaction, because receipts are connected to the accomplished

performance and, under conditions of inappropriate regulation, in the field of increasing expenditures on health care.

Among the most used output-oriented payment mechanisms, there are payments for performance (mostly with the maximum limit set steadily, or with limit set degressively), bed-days, or DRG.

Schema 2.1: Price mechanism in health care



Source: the authors

On the one hand, input-oriented payment mechanisms can be also named "statutory" mechanisms, which expresses their static character (payment tied to the existence). On the other hand, output-oriented payment mechanisms can be named "contractual" payments, which expresses their flexible character (payment tied to the activity).

The ratio of input to output during 1995 - 2000 and its tendency (which influenced total expenditures) is depicted in Table 2.5.

Table 2.5: System of payment mechanisms

	1995	1996	1997	1998	1999	2000
Ambulatory health care (PAS)	Prevailing input, limited output character				Input character	
Ambulatory health care (ŠAS)	Output character			Regulated output character		
Nursing and residential health care	Fictively output character but fulfilled conditions of input financing				Input character	
Administration and education	Input character					
Sector of pharmacies and diagnostic methods	Regulated output character					

2.2.4 Contractual relations

Bilateral negotiations between holder of resources (buying agent) and provider are referred to as contractual relations (contracting), in which the amount of executed commodities (services) and price (settlement) are the subject of negotiation. The process of negotiations is markedly influenced by the Ministry of Health Care.

The drawbacks of contractual *relations between the financial health insurance companies and providers* are listed here:

1. Amount of delivered services and performances is set by the Ministry of Health Care and health insurance companies (regulation of supply), strongly supported by input character of payment mechanisms.
2. Inequality of the contractual parties is supported by the measures that limit the free entry to the market of providers.
3. Negative externality of unequal relation is represented by the capital transfers that favour chances of some providers (which gain the transfers) while other providers (without transfers) are at a disadvantage.
4. Opposite expectations: the aim of the provider is to cover costs (proportional and fixed).
5. Competition is impossible. Competition is the combination of qualitative attitude (at firmly set amounts subjects can compete by means of prices) and quantitative attitude (at firmly set prices providers compete by means of provided amounts).
6. Different position in front of the strict control and revision system.

2.3 Structure of claims and liabilities

The subject of this subchapter is to analyse contemporaneous structure of claims and liabilities of particular components of health care system, including the genesis of their arising (1995 - 2000). At the same time, this part includes possibilities of elimination of current debt.

2.3.1 Development of claims, liabilities and extent of insolvencies in the Slovak economy

Before analysing claims, liabilities and the extent of insolvencies in the industry of health care, it is appropriate to mention concisely their development on the level of national

economy of the Slovak Republic. Development of claims and liabilities of non-financial organisations in the Slovak Republic (during the period of 1995 - 2000) is characteristic of increasing volume of total claims and liabilities during the time until 1998 and then of the change towards their decrease in absolute volume. Moreover, together with the decrease in volume of total claims and liabilities, the volume of claims and liabilities after the term of repayment decreases even more markedly.

High ratio of claims and liabilities after the term of repayment (this ratio is considered a measure of the extent of insolvency) means such a sticking of financial flows that makes the transfer of financial resources to the places of more effective allocation impossible. If the restoring processes of eliminating insolvent economic subjects do not take place, the insolvency spreads out through input-output ties until it is impossible to distinguish which enterprises are able to survive (which are only hit by the insolvency of others) and which ones are not. Maintaining high rate of insolvency in the Slovak Republic can be attributed to non-existence of such mechanisms that could clear the markets and eliminate the insolvent subjects (non-functioning of bankruptcies and settlements, toleration of soft budget constraints, non-functioning of business courts, etc.). These characteristics were present in the development of Slovak economy (mainly during the period till 1998). Lower toleration of the reasons of insolvencies caused the retreat of this phenomenon starting from 1999. In 2000, the ratio of liabilities after the term of repayment on total liabilities decreased and also the structure of liabilities of enterprises began to change: not only the ratio of liabilities after the term of repayment decreased, but the volume of total liabilities decreased as well (on the other hand, the ratio of own property to liabilities increased).

Table 2.6: Development of liabilities, claims and extent of insolvencies in the Slovak economy (data in %)

Year	1	2	3	4	5	6	7	8
1995	28.1	8.8	42.5	10.3	19.1	34.4	31.4	24.2
1996	25.8	8.4	42.7	9.2	17.6	32.5	32.6	21.6
1997	27.7	8.9	38.8	8.8	17.7	32.3	32	22.7
1998	29.1	9.3	38.7	9.6	18.8	33.3	31.9	24.8
1999	29.2	8.6	42.1	9.1	17.7	34.7	29.4	21.7
2000	26.8	6.1	34.4	6.1	12.2	30.2	22.8	17.8

Notes: 1 - share of liabilities after term of repayment (LATR) in total liabilities
2 - share of liabilities after term of repayment in total returns
3 - share of claims after term of repayment (CATR) in total claims
4 - share of claims after term of repayment in total returns
5 - share of LATR + CATR in total returns
6 - share of LATR + CATR in L + C, where: L = total liabilities, C = total claims
7 - share of L (liabilities) in total returns
8 - share of C (claims) in total returns

** Table 2.5 includes data on non-financial organisations with 20 and more employees.*
Source: Own calculations based on the data of the Statistical Office of the Slovak Republic

Table 2.6 illustrates decreasing volume of insolvencies in non-financial organizations. Together with the decrease in the rate of insolvencies towards the end of the analysed period, the decrease in total liabilities and total claims occurred in comparison to returns of enterprises (it has to be pointed out that the comparison of the volume of liabilities and claims after the term of repayment to the returns is not a comparison of status or flow quantities, this comparison is however considered to be useful for the assessment of "vulnerability" of economic activities). This explains why the ratio of liabilities and claims after the term of repayment to returns decreased considerably more than their ratio to total liabilities and claims respectively.

2.3.2 Evolution of claims and liabilities in heath care

Situation in the area of claims and liabilities in health care does not correspond to downward tendency in other parts of economy. The dynamics of growth of claims and liabilities in heath insurance companies and that of providers increases. The reasons include persistent soft budget constraints, high rate of state protectionism of subjects, impossibility of effective application of distrainment and bankruptcies, and regulated character of industry.

Schema 2.4 depicts asymmetric relations between regulated and non-regulated industry from the point of view of suppliers and buyers. Probability of increasing claims and liabilities after the term of repayment is highest between regulated buyer and regulated supplier. On the other hand, the lowest probability corresponds to the quadrant of contractors of non-regulated supplier and non-regulated buyer.

Schema 2.4: Probability of increasing claims and liabilities after the term of repayment

		Suppliers	
		Sector regulated by the state	Non-regulated sector
Buyers	Sector regulated by the state	**4**	**3**
	Non-regulated sector	**2**	**1**

1 - the lowest, 4 - the highest *Source: the authors*

2.3.3 The year of 1995

In spite of the fact that in 1994 extensive settling up of health care sector was introduced (as a reaction to insufficient handling over of premiums for state insured persons), health insurance companies ended the financial year of 1995 with the liabilities of 3.142 billion SKK.

Table 2.7: State of liabilities and claims of health insurance companies as of December 31, 1995 (in thousand SKK)

	Liabilities	**3,142,000**		Claims	**1,265,000**
R.1	Health care	**2,496,000**	**P.1**	Claims for premiums	**1,089,000**
R.11	Pharmacies	0	P.11	Unpaid premiums	1,089,000
R.12	Performances of health care	0	P.12	Penalties and fines	0
R.121	Residential care facilities	0			
R.122	Other providers of health care	0			
R.2	Credits and loans	**646,000**	**P.2**	Other claims	**176,000**
R.21	Credits and loans	0	P.21	Advance payments	0
R.22	Return financial subsidies	0	P.22	Non-arranged claims	0
			P.29	Other	176,000
B.1	Total balance	**-1,877,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

Table 2.8: State of liabilities and claims of providers as of December 31, 1995 (in thousand SKK)

	Liabilities	**2,480,000**		Claims	**3,142,000**
S.1	Pharmacies	**0**	**R.1**	Pharmacies	**0**
S.11	Suppliers of drugs and ŠZM	0	R.11	to Health insurance companies	0
S.2	Residential care facilities	**2,480,000**	**R.2**	Residential care facilities	**0**
S.21	Suppliers of drugs and ŠZM	1,150,000	R.21	to Health insurance companies	0
S.22	Energies	350,000	R.22	Other claims (for example rents)	0
S.23	Social funds	360,000			
S.24	Provisions and others	620,000			
S.25	to Health insurance companies	0			
S.3	Other providers of health care	**0**	**R.3**	Other providers of health care	**0**
S.32	Suppliers	0	R.31	Suppliers	0
B.1	Total balance	**-2,480,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

2.3.3 The year of 1996

Table 2.9: State of liabilities and claims of health insurance companies as of December 31, 1996 (in thousand SKK)

	Liabilities	**2,942,000**		Claims	**2,763,000**
R.1	Health care	**2,199,000**	**P.1**	Claims for premiums	**1,705,000**
R.11	Pharmacies	773,000	P.11	Unpaid premiums	1,705,000
R.12	Performances of health care	1,426,000	P.12	Penalties and fines	0
R.121	Residential care facilities	1,426,000			
R.122	Other providers of health care	0			
R.2	Credits and loans	**743,000**	**P.2**	Other claims	**1,058,000**
R.21	Credits and loans	0	P.21	Advance payments	0
R.22	Return financial subsidies	0	P.22	Non-arranged claims	0
			P.29	Other	1,058,000
B.1	Total balance	**-179,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

Table 2.10: State of liabilities and claims of providers as of December 31, 1996 (in thousand SKK)

	Liabilities	**3,455,000**		Claims	**4,149,000**
S.1	Pharmacies	**773,000**	**R.1**	Pharmacies	**773,000**
S.11	Suppliers of drugs and ŠZM	773,000	R.11	to Health insurance companies	773,000
S.2	Residential care facilities	**2,682,000**	**R.2**	Residential care facilities	**3,376,000**
S.21	Suppliers of drugs and ŠZM	1,220,000	R.21	to Health insurance companies	3,376,000
S.22	Energies	380,000	R.22	Other claims (for example rents)	0
S.23	Social funds	382,000			
S.24	Provisions and others	700,000			
S.25	to Health insurance companies	0			
S.3	Other providers of health care	**0**	**R.3**	Other providers of health care	**0**
S.32	Suppliers	0	R.31	Suppliers	0
B.1	Total balance	**694,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

2.3.3 The year of 1997

Table 2.11: State of liabilities and claims of health insurance companies as of December 31, 1997 (in thousand SKK)

	Liabilities	**8,296,000**		Claims	**6,776,000**
R.1	Health care	**6,619,000**	**P.1**	Claims for premiums	**6,776,000**
R.11	Pharmacies	2,138,000	P.11	Unpaid premiums	4,708,000
R.12	Performances of health care	4,481,000	P.12	Penalties and fines	2,068,000
R.121	Residential care facilities	4,481,000			
R.122	Other providers of health care	0			
R.2	Credits and loans	**1,677,000**	**P.2**	Other claims	**0**
R.21	Credits and loans	0	P.21	Advance payments	0
R.22	Return financial subsidies	0	P.22	Non-arranged claims	0
				Other	
B.1	Total balance	**-1,520,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

Table 2.12: State of liabilities and claims of providers as of December 31, 1997 (in thousand SKK)

	Liabilities	**6,678,000**		Claims	**6,289,000**
S.1	Pharmacies	**2,138,000**	**R.1**	Pharmacies	**2,138,000**
S.11	Suppliers of drugs and ŠZM	2,138,000	R.11	to Health insurance companies	2,138,000
S.2	Residential care facilities	**4,540,000**	**R.2**	Residential care facilities	**4,151,000**
S.21	Suppliers of drugs and ŠZM	2,330,000	R.21	to Health insurance companies	4,151,000
S.22	Energies	550,000	R.22	Other claims (for example rents)	0
S.23	Social funds	660,000			
S.24	Provisions and others	1,000,000			
S.25	to Health insurance companies	0			
S.3	Other providers of health care	**0**	**R.3**	Other providers of health care	**0**
S.32	Suppliers	0	R.31	Suppliers	0
B.1	Total balance	**-389,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

2.3.3 The year of 1998

Table 2.13: State of liabilities and claims of health insurance companies as of December 31, 1998 (in thousand SKK)

	Liabilities	**12,023,000**		Claims	**12,970,000**
R.1	Health care	**10,120,000**	**P.1**	Claims for premiums	**6,970,000**
R.11	Pharmacies	3,839,000	P.11	Unpaid premiums	6,970,000
R.12	Performances of health care	6,281,000	P.12	Penalties and fines	6,000,000
R.121	Residential care facilities	5,530,000			
R.122	Other providers of health care	751,000			
R.2	Credits and loans	**1,903,000**	**P.2**	Other claims	**0**
R.21	Credits and loans	0	P.21	Advance payments	0
R.22	Return financial subsidies	0	P.22	Non-arranged claims	0
				Other	
B.1	Total balance	**+947,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

Table 2.14: State of liabilities and claims of providers as of December 31, 1998 (in thousand SKK)

	Liabilities	**12,815,000**		Claims	**10,120,000**
S.1	Pharmacies	**3,839,000**	**R.1**	Pharmacies	**3,839,000**
S.11	Suppliers of drugs and ŠZM	3,839,000	R.11	to Health insurance companies	3,839,000
S.2	Residential care facilities	**8,225,000**	**R.2**	Residential care facilities	**5,530,000**
S.21	Suppliers of drugs and ŠZM	3,555,000	R.21	to Health insurance companies	5,530,000
S.22	Energies	1,020,000	R.22	Other claims (for example rents)	0
S.23	Social funds	1,750,000			
S.24	Provisions and others	1,900,000			
S.25	to Health insurance companies	0			
S.3	Other providers of health care	**751,000**	**R.3**	Other providers of health care	**751,000**
S.32	Suppliers	751,000	R.31	Suppliers	751,000
B.1	Total balance	**-2,695,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

2.3.3 The year of 1999

Table 2.15: State of liabilities and claims of health insurance companies as of December 31, 1999 (in thousand SKK)

	Liabilities	**13,285,000**		Claims	**16,305,000**
R.1	Health care	**8,916,000**	**P.1**	Claims for premiums	**13,908,000**
R.11	Pharmacies	3,582,000	P.11	Unpaid premiums	9,203,000
R.12	Performances of health care	5,334,000	P.12	Penalties and fines	4,705,000
R.121	Residential care facilities	4,890,000			
R.122	Other providers of health care	812,000			
R.2	Credits and loans	**4,369,000**	**P.2**	Other claims	**2,397,000**
R.21	Credits and loans	369,000	P.21	Advance payments	1,974,000
R.22	Return financial subsidies	4,000,000	P.22	Non-arranged claims	423,000
				Other	
B.1	Total balance	**+3,020,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

Table 2.16: State of liabilities and claims of providers as of December 31, 1999 (in thousand SKK)

	Liabilities	**16,780,000**		Claims	**10,328,000**
S.1	Pharmacies	**3,582,000**	**R.1**	Pharmacies	**3,582,000**
S.11	Suppliers of drugs and ŠZM	3,582,000	R.11	to Health insurance companies	3,582,000
S.2	Residential care facilities	**12,386,000**	**R.2**	Residential care facilities	**5,934,000**
S.21	Suppliers of drugs and ŠZM	3,701,000	R.21	to Health insurance companies	4,890,000
S.22	Energies	1,140,000	R.22	Other claims (for example rents)	1,044,000
S.23	Social funds	2,965,000			
S.24	Provisions and others	2,606,000			
S.25	to Health insurance companies	1,974,000			
S.3	Other providers of health care	**812,000**	**R.3**	Other providers of health care	**812,000**
S.32	Suppliers	812,000	R.31	Suppliers	812,000
B.1	Total balance	**-6,452,000**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

2.3.3 The year of 2000

Table 2.17: State of liabilities and claims of health insurance companies as of December 31, 2000 (in thousand SKK)

	Liabilities	**15,844,415**		Claims	**20,183,000**
R.1	Health care	**9,613,793**	**P.1**	Claims for premiums	**16,972,000**
R.11	Pharmacies	5,089,793	P.11	Unpaid premiums	9,871,000
R.12	Performances of health care	4,524,000	P.12	Penalties and fines	7,101,000
R.121	Residential care facilities	3,544,000			
R.122	Other providers of health care	980,000			
R.2	Credits and loans	**4,769,000**	**P.2**	Other claims	**3,211,000**
R.21	Credits and loans	369,000	P.21	Advance payments	2,174,000
R.22	Return financial subsidies	4,400,000	P.22	Non-arranged claims	1,037,000
				Other	
B.1	Total balance	**+4,338,585**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

Table 2.18: State of liabilities and claims of providers as of December 31, 2000 (in thousand SKK)

	Liabilities	**20,269,223**		Claims	**13,310,793**
S.1	Pharmacies	**5,089,793**	**R.1**	Pharmacies	**5,089,793**
S.11	Suppliers of drugs and ŠZM	5,089,793	R.11	to Health insurance companies	5,089,793
S.2	Residential care facilities	**14,199,430**	**R.2**	Residential care facilities	**7,241,000**
S.21	Suppliers of drugs and ŠZM	3,788,765	R.21	to Health insurance companies	6,251,000
S.22	Energies	1,566,629	R.22	Other claims (for example rents)	990,000
S.23	Social funds	4,355,859			
S.24	Provisions and others	2,314,177			
S.25	to Health insurance companies	2,174,000			
S.3	Other providers of health care	**980,000**	**R.3**	Other providers of health care	**980,000**
S.32	Suppliers	980,000	R.31	Suppliers	980,000
B.1	Total balance	**-6,958,430**			

Sources: Ministry of Health Care, Statistical Office of the Slovak Republic

2.4 Redistribution mechanism

The subject of this subchapter is to describe the redistribution mechanism, its functioning from the time of its putting into effect and the proposal of more optimal model.

2.4.1 Two systems of redistribution of resources

The system of redistribution of collected premiums among health insurance companies was introduced on January 1, 1995 (Act No. 273/1994 of Code NR SR). Its only aim is to redistribute the risk among health insurance companies with different insurance stock on account of preserving the principle of equality.

Functioning of redistribution system can be split into two, from the point of time not equal, phases. The first phase lasted from January 1, 1995 until June 30, 1999 and can be denoted as simple redistribution. The second phase has lasted from July 1, 1999 till now and can be named sophisticated redistribution.

The rules of simple redistribution were trivial (leading to serious deformations of the system at that time, which will be detailed later in this analysis). The decisive variables of the redistribution formula were following two parameters:

1. The volume of paid premiums with the exception of the sum of the premiums paid by the state
2. The number and age structure of all insured (including the insured of the state) for the due month

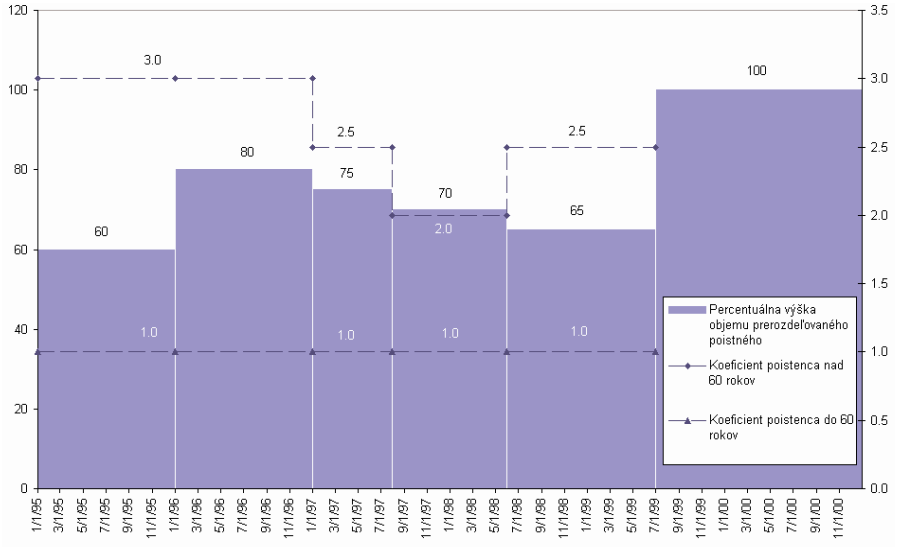
Table 2.19: Overview of changes in the rules of simple system of redistribution

Date of efficiency	Act No.	Insured over 60	Volume of redistributed paid premiums	Other changes
1.1.1995	273/1994	3.0	60 %	
1.11.1995	231/1995	3.0	60 %	Employment fund of the Slovak Republic was added as the payer for unemployed persons
1.1.1996	304/1995	3.0	80 %	
1.1.1997	386/1996	2.5	75 %	General health insurance company has the central register of insured persons of the obligatory health insurance (“central register”)
1.8.1997	202/1997	2.0	70 %	
1.6.1998	124/1998	2.5	65 %	Setting the number of insured of due health insurance company and of their age structure comes from the data in central register

Source: Act No. 273/1994 of Code NR SR, laws on state budgets

Though the law formulation was enormously rough and unclear, the logic of the redistribution was clear: the claims of old citizens (the law defined the age limit 60 years and over) towards the health service are higher (exactly three times higher) than those of younger citizens (under 60 years) and that is why health insurance companies insuring more elderly people have a right to additional financial resources to cover their thus increased claims. Each insured over 60 years counted for three ordinary insured persons.

Graph 2.1: Changing parameters of redistribution system



Source: Act No. 273/1994 of Code NR SR, laws on state budgets

As follows from the Table 2.19 and the Graph 2.1, setting the redistribution system did not correspond with expectations, which is why both parameters (volume of redistributed premiums and coefficient of insured over 60) were often changed.

Emerged deformations (number of insured higher than number of citizens, insufficient consideration of health risks of particular insured) of the simple redistribution system were not reacted to until 1999.

Table 2.20: Overview of changes in the rules of simple system of redistribution

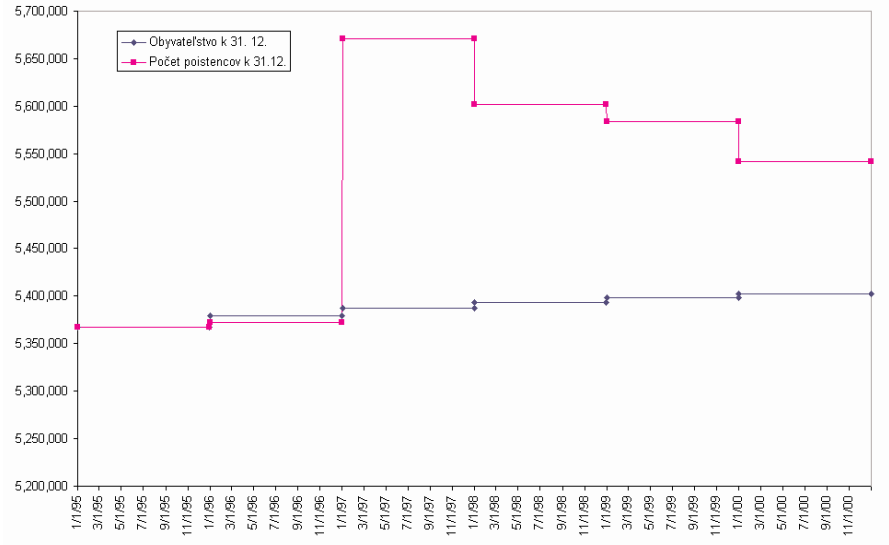
Date of efficiency	Act No.	Groups of insured	Volume of redistributed paid premiums	Other changes
1.7.1999	151/1999	Groups of insured according to the wage structure, in 5-year groups	100 %	The notion "index of risk" is introduced into the system

Source: Act No. 273/1994 of Code NR SR, laws on state budgets

The sophisticated system of redistribution has been in operation from July 1, 1999. The *decisive variables of redistributive formula* are following three parameters:

1. The sum of paid premiums without the sum of premiums paid by the state and by National Institute of Labour
2. The number of all insured according to their sex and age structure (from 0 to 80 years, in 5-year groups) and the number of insured in the age group over 80 years for the due month
3. Index of the risk

Graph 2.2: Number of registered insured and number of inhabitants



Source: Statistical Office of the Slovak Republic

Present system of redistribution can be considered functional as it fulfils the basic functions connected to the health risks levelling-off. The original problems such as "doubled souls" (see Graph 2.2), conduct and administration of the account and frequent changes of conditions were removed almost completely. However, three areas remain problematic:

1. The system redistributes paid and not directed premium income
   (what to redistribute?)
2. The system redistributes 100 % of resources
   (how much to redistribute?)
3. The system guarantees vertical but not horizontal equality
   (how to redistribute?)

2.4.2 Proposal of optimum redistribution system

What to redistribute. The present system is based on paid premiums. However, the object of redistribution should be the directed premium income (the differences are included in Table 2.21).

Table 2.21: Differences between directed and paid premium income

	1998	1999	2000
Directed premium income	31,106,515	31,570,516	32,384,468
Paid premium income*	28,556,706	29,186,443	31,755,635
Difference	2,549,809	2,384,073	628,833

Note: During 1993 - 1997, the data on directed premium income are not available.

*** without penalties, fines and owned premiums from previous years: 118,279 thousand of SKK in 1998, 277,361 thousand of SKK in 1999 and 387,153 thousand of SKK in 2000**

Source: Statistical Office of the Slovak Republic

Directed premium income should be the object of redistribution. *Subsequent positive effects* should arrive in two areas:

1. Health insurance companies would increase their motivation to collect claims.
2. The difference between directed and paid premium income should be supplemented by health insurance company from its own resources, which would contribute to lowering of volume of claims and to their more effective collection.

How much to redistribute. Present system redistributes 100 % of premium income, which decisively affects the motivation of health insurance companies to create funds and makes the creation of complementary services and performances impossible in full extent. It is necessary to take the fact that solidarity principle is one of the pillars of health insurance used throughout Europe into account. Redistribution of resources is therefore one of elementary preconditions of functioning insurance system. However, when expecting development of actual competition among health insurance companies it would be better to consider the decrease of volume of redistributed resources - to the level of 60 - 70 %.

How to redistribute. Present system redistributes the financial resources in a sophisticated way at the vertical level (solidarity among different income groups) in favour of those people who have higher claims to health care (risk index according to the age groups). This system does not guarantee horizontal equality among particular regions of Slovakia that definitely are at different levels economically and socially. Preference is given to big agglomerations (Bratislava, Košice, Banská Bystrica) where the majority of resources comes at the expense of rural regions.

2.5 Methods and procedures of accounting

The object of this subchapter is to analyse accountancy methods and procedures in the framework of health care during the time period 1993 - 2000 and to propose more exact methods.

2.5.1 Single-entry and double-entry bookkeeping

By bookkeeping, all processes of creation of values that the accounting unit carries out and all relations to other business subjects, state and individuals expressed in financial units are registered. It tracks and controls the position and progression of property, liabilities, expenditures and revenues of the accounting unit. A part of the accountancy is the statistical returns system which provides information of the demanded structure.

Single-entry bookkeeping registers all processes of creation of values with reference to the movement of ready cash, i.e. it keeps accounts on revenues and expenditures accomplished in real time. Without help represented by financial reports, this type of bookkeeping cannot provide the overview of property (assets) and debts (liabilities) of the accounting unit.

Double-entry bookkeeping registers all processes of creation of values and movements at the moment of creation, whereby strictly following the rule of equality of two sides (debit = credit) irrespective of the real movement of financial resources. In each moment, it provides the overview of the state of property, claims and liabilities, expenditures and revenues of the accounting unit.

2.5.2 Juridical norms regulating the accounting standards and financial reporting of health insurance companies

Health insurance companies are juridical entities established according to the special law with exactly defined subject of activities being the financing of providing health care.

Since 1993 - when an integral institution guaranteeing health insurance, social insurance and services, and taking care of unemployed persons was created - the Ministry of Finance has been looking for a potential model of accounting rules which has undergone several changes during the time.

The basic norm defining the status of health insurance companies from the point of view of accounting system is the regulation of the Ministry of Finance No. V/20 531/1992, issued on October 13, 1992, which arranges the accounts and accounting procedures of "political parties, citizen associations and other non-gainful organisations" (health insurance companies belong to the group).

Specific conditions of bookkeeping of health insurance companies are quoted in "Finančný spravodaj" No. 15/1997, issued by the Ministry of Finance, in the Regulation of the Ministry of Finance No. 4121/1997 issued on December 5, 1997, which defined spreadsheet and procedures of accounting for health insurance companies, Social insurance company and National Institute of Labour. Each year, conditions and terms of elaborating annual balance sheet are set by special regulations issued by the Ministry of Finance of the Slovak Republic.

An integral part of financial reporting of health insurance companies is formed by a whole set of statistical statements that assess achieved indicators according to different criteria but without influencing the quality of accounting system of health insurance companies.

2.5.3 Chart of accounts of health insurance companies

The structure of particular account classes valid for health insurance companies is as follows:

The chart of **account class 0** (Table 2.22) corresponds in its structure to charts of other juridical entities that keep accounts in the system of double-entry bookkeeping. The chart creates space sufficient enough for all needs of health insurance companies.

Table 2.22: Account class 0 - Investment property

01 – Intangible investment property
02 – Tangible investment property – depreciated
03 – Tangible investment property – non-depreciated
04 – Provision of intangible and tangible investments
05 – Granted advance payments for intangible and tangible property
06 – Financial investments
07 – Allowances for intangible investment property
08 – Allowances for tangible investment property
09 – Adjusting entry for investment property

Account class 1 (Table 2.23) is used only sporadically, mainly to guarantee the functioning of health insurance company.

Table 2.23: Account class 1 - Supply

11 – Material
13 – Goods
19 – Adjusting entry for supplies

The **account class 2** (Table 2.24) is used fully in a standard way and is comparable to the one used by other juridical entities.

Table 2.24: Account class 2 - Financial accounts

21 – Money
22 – Accounts in banks
23 – Current bank credits
24 – Other short-term financial accommodations
25 – Short-term financial property
26 – Transfers among financial accounts
27 – Adjusting entry for financial accounts

The **account class 3** (Table 2.25) is extended, compared to the chart of accounts used by other juridical entities, by specifics of health insurance companies, namely:

a/ in class 31 - Claims:

316 - Claims for premiums - the account keeps records of claims to the payers of premiums, which the insurance company finds out on the basis of statistical notification sent by individual payers, whereby the contra-account is represented by the "credit" side of analytical accounts of particular fund

317 - Granted advanced payments to health care providers - the account registers advanced payments to individual health care providers for the performances of delivery of health care services being the subject of keeping record, whereby the contra-account is represented by the "credit" side of analytical accounts of particular fund

Table 2.25: Account class 3 - Settling relations

31 – Claims
32 – Liabilities
33 – Settling with employees and institutions
34 – Settling of taxes, subsidies and other settling
35 – Claims by reason of associations
36 – Liabilities against associations

b/ in class 32 - Liabilities:

326 - Liabilities from insurable contractual relations - the account keeps records of liabilities of health insurance company in relation to individual providers of health care services, whereby the contra-account is represented by the "credit" side of analytical accounts of particular fund

The **account class 5** (Table 2.26) records in its structure mainly the expenditures of sole running of health insurance company which are met by the administration fund. The cost account connected to delivery of health care services is:

- Class 56 - Expenditures of contractual insurance and additional insurance - for the services delivered as over and above standard (on the side of revenues covered by the revenues of the account class 66 - Revenues of contractual insurance and additional insurance).

Table 2.26: Account class 5 - Expenditures on running of organisation

50 – Consumed purchases
51 – Services
52 – Personal expenditures
53 – Taxes and fees
54 – Other expenditures
55 – Write-offs, sold property, provisions, deferring and correcting items
56 – Expenditures on contractual insurance and additional insurance
57 – Internal transfers within organisation
59 – Income tax

In **account class 6** (Table 2.27), records on limited structure of revenues from the activities of health insurance company are kept. The avail account connected to provision of health care is:

- Class 66 - Revenues of contractual insurance and additional insurance

Table 2.27: Account class 6 - Revenues from the activities of company

60 – Returns of own performances and services
62 – Capitalizations
64 – Other revenues
65 – Returns of property sales, reserves, deferring and value adjustments
66 – Revenues of contractual insurance and additional insurance
67 – Internal transfers within organisation
69 – Operating subsidies

The **account class 9** distinguishes the double-entry bookkeeping of health insurance companies from the double-entry bookkeeping of other juridical entities, by introducing

independent funds into the account class 91 - Funds of organisation. These include independent integrated accounts groups with relation to special funds, namely:

- 901 - Fund of investment property (no connection to providing health care)
- 902 - Basic fund
- 914 - Fund of administration (no connection to providing health care)
- 916 - Fund of reserves
- 917 - Special-purpose fund
- 918 - Social fund (no connection to providing health care)

Table 2.28: Account class 9 - Funds, economic result, long-term credits and loans, reserves, closing accounts and off-balance sheet accounts

90 – Fund of investment property
91 – Funds of organisation
92 – Account of creation of founds
93 – Economic result
94 – Reserves
95 – Long-term bank credits and liabilities
96 – Closing accounts
97 – 99 – Off-balance sheet accounts

In spite of the fact that health insurance companies keep records in the system of double-entry bookkeeping, their *accountancy system differs* from the accountancy system of business companies in following aspects:

- separated division of expenditures and revenues for administrative, taxed and non-taxed activities
- separated registering of receipts and spending of particular funds created according to the obligatory law regulations

In addition, health insurance companies are obliged to keep records according to more analytical splitting, which itself causes extraordinary work, no well-arranged accountancy and complicated financial reporting. Even though the number of health insurance companies is low, the volume of financial resources they directly ask for strict methodical management from the department of public finance of the Ministry of Finance of the Slovak Republic is high.

2.5.4 Shortcomings of contemporary accounting system of health insurance companies

Shortcomings of the accountancy system used by health insurance companies may be divided into two basic groups:

1. Shortcomings related to the framework environment in which the accountancy system is used
2. Shortcomings of the accountancy system

Shortcomings related to the framework environment in which the accountancy system is used

The basic shortcoming of the accountancy system used at present by health insurance companies relates to the "non-insurance" way of perceiving of the system of health insurance. The use of the second part of the term, i.e. "insurance", is not fully justifiable. If health insurance companies in reality were "insurance companies", accountancy system used by them would probably be alike the one used by commercial insurance companies, where insurance risk is assessed, responsibility for insurance is decomposed between underwriter and reinsurance company, and financially rational and commercial behaviour is presumed. However, considering real activities of health insurance companies at present, they can be described as "redistributive" institutions, for "fee" firstly redistributing collected financial resources among themselves in a determined way and secondly redistributing resources according to their own assessment to particular providers of health care. This reality corresponds well to the used accountancy system. Health insurance companies act like "administrative" associations, "administering" money (the collected premiums) of strangers under stated terms.

The second shortcoming of the framework environment in which this accountancy system is used is the fact that a regular system of stock-taking of claims and liabilities in the field of health insurance does not exist. This enables the members of the system to abuse these shortcomings to their favour, causing higher inefficiency and deficiency of the whole system of financing.

The third shortcoming of the framework environment consists in insufficiently prepared and inconsequently accomplished decisions of the Ministry of Finance in the field of finance. These decisions are not fully transformed into valid accountancy system of health insurance, which brings about evident and high losses of financial resources.

In the framework environment in which the accountancy system operates, any element of direct financial control of health insurance companies is completely absent. In all fields of economy, various juridical entities with much lower turnover (compared to health insurance companies) are obliged to carry out financial audit of the companies (as stated by the law on accountancy and commercial code). At present, decision to carry out financial audit of health insurance company is left to a will of its founder; nevertheless, major part of health insurance

companies carries out the audit for their own internal needs. It is necessary to emphasize the fact that the accounting system used by health insurance companies includes so many specifics that performing an audit is above the normal level of qualification of average auditor.

Shortcomings of the accountancy system

The basic shortcoming of used accountancy system rests in the fact that, as far as expenditures and revenues, receipts and costs are considered, keeping records is carried out correspondingly but not equivalently. Health insurance companies do not consider the expenses on delivered health care to be their costs, and they do not consider the collected premiums of health insurance their revenues. Thus, used accountancy system is artificially created as a "hybrid" combination of single-entry and double-entry bookkeeping.

The second shortcoming is the time inconsistency of receipts and outlays. Accountancy system does not provide a real picture of real financial state of insurance companies, since not all liabilities of delivered health insurance performances become the liabilities of current accounting year, and - similarly -receipts from the premiums of current accounting year do not become the claims of current accounting year (this is directly influenced by the facts mentioned under the point 1).

Accountancy system does not allow for creation of irrevocable debts, questionable debts and value adjustments, which deforms financial state of health insurance companies to a great extent. This is in a contradiction to the valid law on accountancy and it represents a formal shortcoming of regulation concerning the accountancy system of health insurance companies.

Character of economy, through a system of funds, nears the combination of single-entry and double-entry bookkeeping, and together with independent accountancy parts devoted to particular funds makes used accountancy system labour-intensive and very complicated.

From the point of view of efficiency of the system, centrally governed system of health insurance does not enable health insurance companies to act rationally and effectively under the conditions of limited possibilities.

2.6 Expenditures

2.6.1 System of health accounts

System of health accounts (SHA) defines the framework of a group of related tables serving standard reporting of health care expenditures and their financing. Basically, this

system represents:

1. framework for data collection in international context as well as their comparison
2. assistance to competent authorities

National health accounts usually attain the form of two-dimensional tables with expenditures divided according to providers of health care (or programmes) and according to sources of financing. At the same time, and it is necessary to emphasize the importance of it, there is a division made between institutional and functional aspects of health care in the framework of health care accountancy, which appears in two different dimensions of reporting the needs of international comparisons.

Rendering health care and its financing is a complex and multi-dimensional process. A set of basic tables in the framework of SHA provides answers to *three basic questions*:

1. where do resources come from?
2. what are resources intended for? (provider of health services and goods)
3. what sort of performances/services (functional definition) is realised and which sorts of goods are purchased?

As follows, SHA is based on a three-axis system of recording health care expenditures mainly via newly proposed *International classification of health care accounts (ICHA)* which defines:

1. health care according to the function (ICHA-HC)
2. activities of providers of health care (ICHA-HP)
3. financial resources of health care (ICHA-HF)

Basically, it is possible to define following *purpose areas of SHA*:

1. delivery of a set of internationally comparable health care accounts in the form of standard tables
2. definition of internationally harmonised delineation of health care and its basic categories
3. distinguishing the basic functions of health care from the functions connected to health and emphasizing the inter-sectional aspects of health care
4. presentation of tables that allow for analysing financial flows within the system of health care along with classification of insurance programmes and other ways of finance arranging
5. proposal of framework of time-consistent reporting of health care services
6. monitoring of economic consequences of health care and health care policy reforms

7. delivery of framework for analysis of health care system from the point of view of economy, which is consistent with national accountancy rules
8. building-up of economic model of supply and use of health care services

2.6.2 Basic criteria for the system of health accounts

It is the task of SHA, similarly to the System of national accounts (SNA), to create an integral system of complex, internally consistent and internationally comparable accounts being at the same time compatible with other aggregate economic and social statistics. These qualitative criteria set on SHA compete with the objectives of punctuality and accuracy and with political sensitivity and importance of indicators provided by SHA.

2.6.3 Set of standard tables

SHA (OECD, version 1.0) proposes a set of inter-connected tables, of which each table represents different aspect of health care services. SHA is a flexible system as it does require recording of all aspects to a certain moment and it furthermore does not require records each year. Majority of countries should be able to implement it successfully in next several years.

Table 2.29: Overview of standard tables of SHA

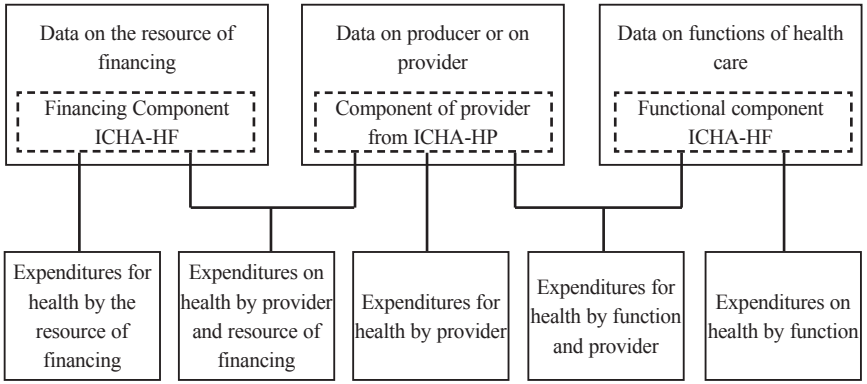
Table 1. Current expenditures on health care according to the function, type of care, provider and financial resources	= total use of units of health care services and goods according to the function of health care, provider and financial resources; in current prices
Table 2. Current expenditures on health care according to the function of health care and area of provider	= total use of units of health care services and goods according to the function of health care and area of provider; in current prices
Table 3. Current expenditures on health care according to the area of provider and financial resources	= total use of units of health care services and goods according to the area of provider and financial resources; in current prices
Table 4. Current expenditures on health care according to the function of health care and financial resources	= total use of units of health care services and goods according to the function of health care and financial resources; in current prices
Table 5. Total expenditures on health care including the functions related to health care	
Table 6. Personal expenditures on health care according to the main ICD categories	
Table 7. Personal expenditures on health care according to sex	
Table 8. Chosen price indices of health care	
Table 9. International trade in the field of health care	
Table 10. Total employment in industries of health care	

Source: OECD, SHA

2.6.4 Information flows in health care accountancy

Information recorded in the form of cross-tables in National health accounts represents the expenditures on health care according to the financing unit and the provider of health care. Particular balances of presentation in the form of tables offer an overview of expenditures according to financing unit and provider (recipient of resources). Sums of row and column balances and grand totals have to be the same, which allows for a simple and basic cross-control of data. At the same time, this type of accounts usually distinguishes public from private financing. Schema 2.5 presents the information flows in health care accountancy.

Schema 2.5: Information flows in health care accountancy



Sources: OECD, System of Health Accounts, Version 1.0, 2001

Another attitude, more elaborated and used, makes use of cross-classification of expenditures on health care according to financial resources and provider, as a starting point. To calculate the total expenditures on health care, it is necessary that each box in the table corresponds with functional division and balances of ICHA. If the expenditures on the functions of health care prevail, an additional box is added to the total expenditures. Accuracy can be increased by identification of individual functions of health care in each box. Total expenditures on health care are in this case equal to the sum of expenditures in the area of resources and providers. Data that are cross-classified through financing and providers of health care often represent the smallest units of information available in administrative files or, in general, the basic units creating the NHA.

Table 1

This table presents the total final use of residential units of health care services and goods

according to the function of care, chosen industries, provider and according to the source of financing. Using this, it is possible to combine three dimensions of ICHA flexibly with the objective to provide basic set of indicators of expenditures on health care and their financing.

Table 2

This table presents the total final use of residential units of health acre services and goods according to the function of care and according to the industry of provider (in current prices).

Table 3

This table presents the total final use of residential units of health acre services and goods according to the industry of provider and according to the source of financing in current prices. It also offers a possibility to compute the expenditures according to the provider in a cross-way. In the process of computing, it is necessary to combine and harmonise the data on industries with the correct data.

Table 4

This table presents the total final use of residential units of health acre services and goods according to the function of health care and according to the source of financing in current prices.

Table 5

As an addition to some items of the table 4, this table presents the expenditures on items that are connected to health care in the form of memorandum items - however, this is done using only the basic division of expenditures into public and private (the whole package of expenditures on functions connected to health care is financed from public resources - a typical function of the government).

Table 6

This table presents current personal expenditures on health care according to the main categories of ICD.

Table 7

This table presents current personal expenditures on health care according to the age groups and according to the sex.

Table 8

This table presents the basic methods of measuring the price indices.

Table 9

This table presents the imports related to health care according to the industry of provider

and according to the sort of import.

Table 10

This table presents the employment in the sector of health care, such as the number of employed persons and the number of hours worked in the full-time equivalent.

2.6.5 Process of compiling the standard tables for the Slovak Republic

The process of compiling national health accounts according to the methodology of the Slovak Republic took place in three phases:

1. Compiling table MOH
2. Transferring data into tables G1 - G3 and P1 - P5
3. Compiling tables T1, T3 - T5, T8 and T10

Compilation of table MOH was based on the state final accounts of the Ministry of Finance of the Slovak Republic. Based on those, data were transformed into tables G1 - G3 presenting the origin and use of health care resources (flowing through the system of public finances) via the system of debit and credit. The accounts P1 - P5 take private resources flowing to the system into account.

Tables T1 and T3 - T5 are essential for the analysis of financial flows. Compilation of the tables was based on data provided by the Statistical Office of the SR, the Ministry of Health Care and the Ministry of Finance of the SR (see the details in the Table 2.30).

Table 2.30: Sources of data used for compilation of national health accounts

Central government (Ministries, regional offices)	State final accounts, Ministry of Health Care of the SR
Villages and towns	State final accounts, Ministry of Health Care of the SR
Health insurance companies	Statistical Office of the SR, Ministry of Health Care of the SR
Payments in cash	Statistical Office of the SR
Liabilities and claims	Ministry of Health Care of the SR

The tables T2, T6, T7 and T9 were omitted on purpose as having no relation to the Slovak Republic. Data in these tables do not relate directly to the financial flows within the Slovak system of health care.

2.6.6 Interpretation of key trends and flows

For the purposes of analytical comparison of expenditures on health care and its subsystems from 1995 onwards, calculations based on constant prices (prices as of 1995) and

GDP deflator of non-market services were used.

Current expenditures on health care

In the total expenditures on health care, the highest item is represented by current expenditures. Total current expenditures on health care display a continuous increase from 1995 onwards. Meanwhile, their share in total expenditures increases, too. With the only exception being the year of 1998, current expenditures in constant prices, i.e. in real terms, increase as well.

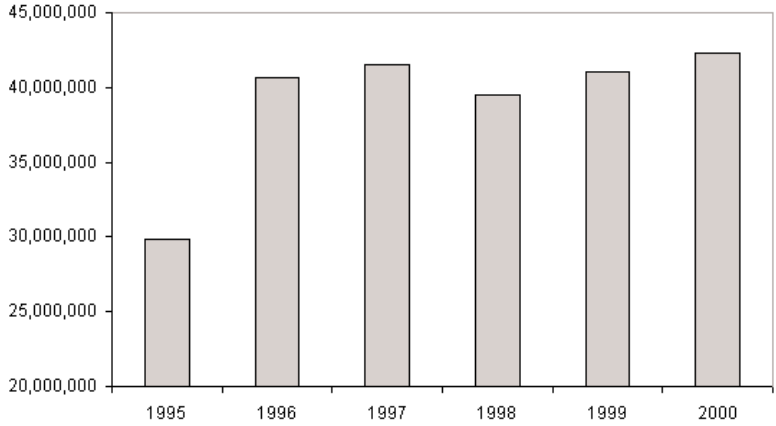
Table 2.31: Share of current expenditures in total expenditures on health care

Year	1995	1996	1997	1998	1999	2000
Share	92.6 %	94.3 %	94.2 %	94.8 %	95.1 %	95.3 %

The most important financial source of current expenditures is represented by the system of health insurance companies as a part of general government. Thus, public expenditures dominate the financing of health care. In the Slovak Republic, private health insurance almost does not exist; private resources in the system are represented by the payments in cash for provided health care services, medicaments and other medical products and appliances. During the analysed time period, their share increased gradually from 6.2 % to 10.4 %.

After adjustment to constant prices (prices as of 1995), it is obvious that the highest increase of the total current expenditures on health care was recorded in the year of 1996 - nearly 10 billion SKK. At the same time, considerable increase was registered almost in all important segments of the system - hospitals, out-patient departments and medicaments. Following subtle decrease in the year of 1999, the growth rate of expenditures came up by 3 % over the rate of inflation.

Graph 2.3: Current expenditures on health care (in thousand SKK, constant prices of 1995)



Source: Statistical Office of the Slovak Republic

Table 2.32: Citizens' expenditures in cash on chosen categories of health care as shares in the total current expenditures on health care

	1995	1996	1997	1998	1999	2000
Curative and rehabilitative care	1.8 %	1.6 %	2.1 %	1.6 %	2.2 %	2.5 %
Pharmaceuticals and other medical non-durables	3.4 %	3.6 %	4.3 %	4.8 %	7.9 %	5.8 %
Therapeutic appliances and other medical durables	0.9 %	1.0 %	1.4 %	1.5 %	0.0 %	2.1 %

Serving the needs of following analysis, categories with the most important position in the area of financing health care (categories whose share in the total expenditures on health care represented around 70 % in the long-run) were concentrated on.

Table 2.33: Shares of chosen categories of expenditures in the total expenditures

	1995	1996	1997	1998	1999	2000
General hospitals	29.7 %	25.5 %	23.6 %	22.5 %	27.5 %	22.9 %
Special hospitals	4.0 %	3.2 %	2.9 %	3.7 %	3.2 %	2.9 %
Prescribed medicaments	23.5 %	23.1 %	22.7 %	24.1 %	25.4 %	27.5 %
Diagnostic services and laboratories	8.5 %	7.3 %	7.5 %	7.8 %	5.8 %	7.9 %
General practitioners	0.2 %	3.2 %	3.0 %	2.6 %	2.8 %	3.1 %
Specialists	5.6 %	6.8 %	7.5 %	6.9 %	6.6 %	6.9 %

On the one hand, from the point of view of functional division of health care, the highest share of current expenditures on health care is represented by expenditures on curative and rehabilitative care. From 1995 onwards, their share in total expenditures goes down, namely to the advantage of the expenditures on pharmaceuticals and other medical non-durables. On the other hand, the expenditures on prevention exhibit only a negligible part of the current expenditures on health care (just 0.04 % in 2000).

Table 2.34: Current expenditures on health care according to the functions

	1995	1996	1997	1998	1999	2000
Curative and rehabilitative care	55.7 %	56.7 %	55.3 %	53.6 %	52.8 %	48.8 %
Pharmaceuticals and other medical non-durables	27.0 %	26.7 %	27.0 %	28.9 %	33.4 %	33.3 %
Therapeutic appliances and other medical durables	2.9 %	3.4 %	4.5 %	3.8 %	2.5 %	4.6 %
Administrative expenditures	6.0 %	5.9 %	5.7 %	5.8 %	5.5 %	5.3 %
Current expenditures on health care (thousand SKK, current prices)	29,871,704	39,990,608	44,288,068	47,288,486	49,705,021	52,658,688

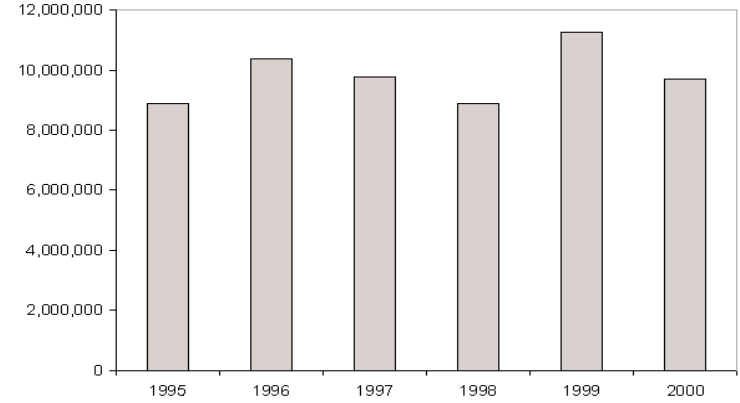
General hospitals

Expenditures on general hospitals, with the share of almost 23 %, represented the second most important category of expenditures (after the expenditures on pharmaceuticals) in the year of 2000. During the previous years, with the exception of 1998, they stood for the most

important item (Table 2.33).

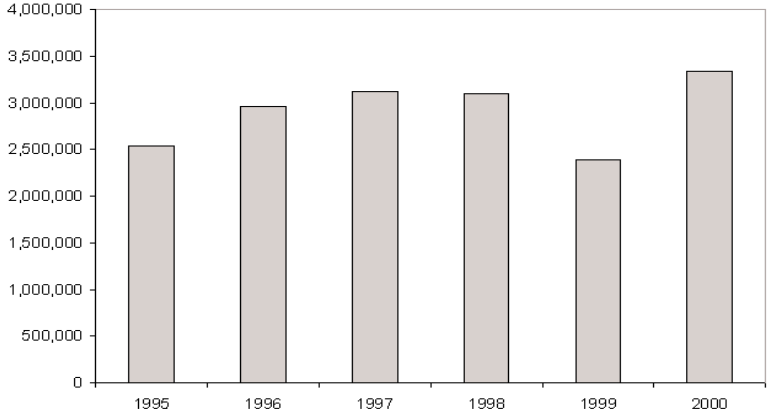
The total expenditures on residential care facilities of general character recorded, after an exceptional increase in 1996, a relatively subtle nominal gain. Even though quite expressively decreasing in 2000, they did otherwise both in nominal (-1.6 billion of SKK, i.e. 11.7 %) and real (-1.6 billion of SKK, i.e. 14.1 %) terms. This decrease can to a great extent be explained by re-classification and class-shifting of some health care facilities. An example can be provided by diagnostic and laboratory facilities which recorded increase of expenditures (by 1.3 billion of SKK in current prices and 950 million SKK in constant prices) in the same year (Graph 2.5).

Graph 2.4: Current expenditures on general hospitals (thousand SKK, constant prices of 1995)



Source: Statistical Office of the Slovak Republic

Graph 2.5: Development of real expenditures on diagnostic services and laboratories (thousand SKK, constant prices of 1995)

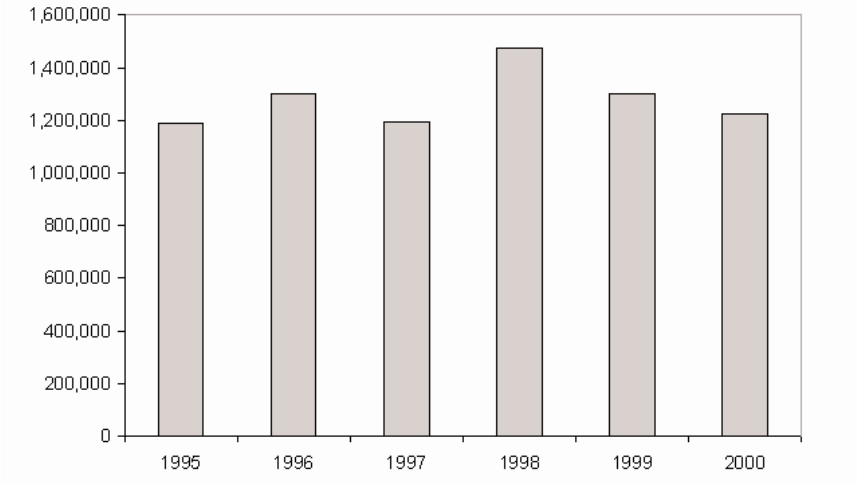


Source: Statistical Office of the Slovak Republic

Specialised residential care facilities

Specialised residential care facilities represent a category of health care facilities with relatively stable development of expenditures during the analysed time period. Their share in the total expenditures on health care amounts to about 3 %. Single exception being the year of 1998 (when this category recorded significant increase (23.5 %) of real expenditures), nominal as well as real decrease was registered in other years. Consequently, the share of these expenditures in the total expenditures within the system of health care decreased at the same time.

Graph 2.6: Current expenditures on specialised residential care facilities (thousand SKK, constant prices of 1995)

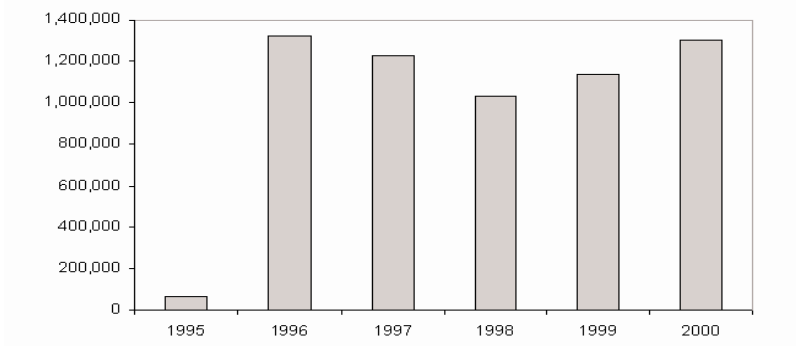


Source: Statistical Office of the Slovak Republic

Out-patient departments of general practitioners

In the field of expenditures on out-patient departments of general practitioners, the year of 1996 was the turning point. Real expenditures decreased in the years following 1996 (in 1997 and 1998). In the long-run, however, the expenditures on out-patient departments of general practitioners represent only 3 % of total current expenditures on health care. In 1999 and mainly in 2000, again an increase in these expenditures was registered, their dynamics going up markedly. In 2000, this type of expenditures became a decisive factor influencing the increase in total expenditures since the real increase of expenditures on out-patient departments of general practitioners (14.7 %) noticeably exceeded the real increase of total expenditures on health care (3 %).

Graph 2.7 Current expenditures on out-patient departments of general practitioners (thousand SKK, constant prices of 1995)

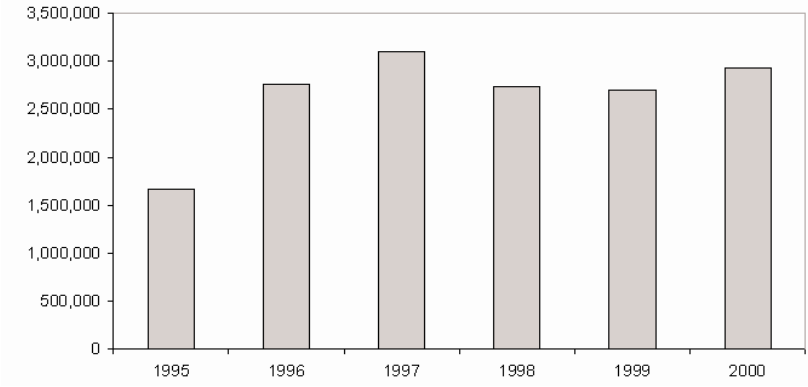


Source: Statistical Office of the Slovak Republic

Out-patient departments of specialists

The development of expenditures on specialised out-patient departments proves several characteristics similar to those of the development of expenditures on general out-patient departments. Since specialists were excluded from the category of residential health care facilities even before 1995, the increase in expenditures was not very sharp in the year of 1996. Real decrease of the expenditures on specialised out-patient departments was delayed for one year. Then, according to carried-out calculation, the decrease was registered firstly in the year of 1998 (-12.1 %) and secondly, in a smaller extent, in the year of 1999 (-1.4 %). In 2000, however, the expenditures increased substantially both in nominal and real (9 %) terms again, similar to the case of general practitioners.

Graph 2.8: Development of real expenditures on specialised out-patient departments (thousand SKK, constant prices of 1995)

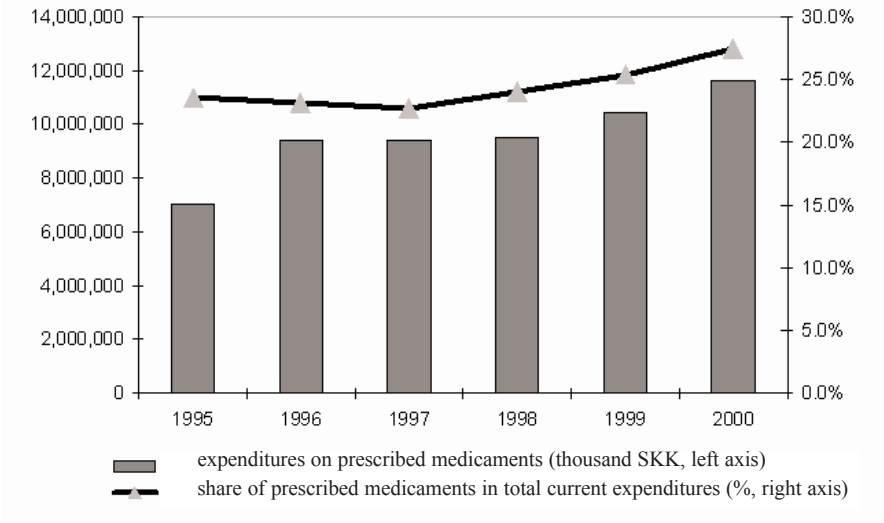


Source: Statistical Office of the Slovak Republic

Expenditures on prescribed pharmaceuticals

The expenditures on pharmaceuticals and mainly the expenditures on prescribed pharmaceuticals (as a part of the expenditures on pharmaceuticals) represent the most important expenditure item within the area of current expenditures on health care. During the analysed time period, these expenditures registered the highest real growth rates in the years of 1996, 1999 and 2000. As a matter of fact, their historically largest share in the total current expenditures on health care (27.5 %) was recorded in 2000.

Graph 2.9: Development of the expenditures on prescribed medicaments (thousand SKK, constant prices of 1995) and their share in total current expenditures on health care



The development of consumption of medicaments is furthermore characteristic of following structural changes:

1. Under the influence of deficit financing of hospitals, a push-out effect appears (hospitals lower their operating costs by decreasing the volume of delivered medicaments). The volume of medicaments issued by pharmacies in hospitals decreases; for example, this volume decreased by 14 % in the year of 1999, whereby the volume of medicaments issued by public pharmacies increased by 19 %. In 2000, the volume of medicaments delivered by pharmacies in hospitals reached the level of 1998 nominally; on the other hand, the volume of pharmaceuticals delivered by public pharmacies increased dramatically - by 48.6 % (Table 2.35).
2. The dramatic increase in expenditures on medicaments in years 1996 - 2000, by 96 % (!), can be accounted for by exchange rates and their fluctuations to a great extent.

After adjustment of data on consumption of medicaments for exchange rate fluctuations, the increase no longer appears that sharp. Data reveal that in 2000, volume of natural consumption (10.2 bill. SKK) represents 66 % of the total volume of expenditures on medicaments (15.3 bill. SKK), while remaining 34 % (5.1 bill. SKK) can be attributed to exchange rates fluctuations.

3. From the point of view of settlement structure of medicaments, decrease in fully reimbursed expenditures on medicaments and significant increase in partially reimbursed medicaments are important (Table 2.37).

Table 2.35: Development of consumption of medicaments (in thousand SKK)

	1995	1996	1997	1998	1999	2000
Delivered by public pharmacies	n.a.	6,479,449	7,629,788	9,023,779	10,754,046	13,408,022
Delivered by pharmacies in hospitals	n.a.	1,335,220	1,503,842	1,896,360	1,649,122	1,885,666

Source: Statistical Office of the Slovak Republic

Table 2.36: Adjustment of medicaments consumption for exchange rate fluctuations (in thousand SKK)

	1995	1996	1997	1998	1999	2000
Total	n.a.	7,814,669	9,133,630	10,920,139	12,403,168	15,293,688
Volume of medicaments consumption adjusted for exchange rate fluctuations	n.a.	7,814,669	8,345,230	9,501,881	9,195,743	10,165,789
Volume of medicaments consumption explained by the exchange rates fluctuations	n.a.	0	788,400	1,418,258	3,207,425	5,127,899
As a percentage of the total consumption	n.a.	0.00	0.09	0.13	0.26	0.34

Source: Own calculations

Table 2.37: Structure of delivered medicaments (thousand SKK)

		1997	1998	1999	2000
B1	**Medicines delivered with full reimbursement**	599,163	748,256	139,200	506,600
B2	**Medicines delivered with partial reimbursement**	1,026,021	938,772	1,093,800	887,800
B3	**Medicines delivered without reimbursement**	528,111	464,110	815,800	690,000
H	**Medicines bounded to order forms of hospitals - residential parts**	1,292,018	1,629,721	944,300	1,071,900
R1	**Over-the-counter medicines reimbursed by health insurance companies**	6,089,895	6,934,722	1,980,600	3,431,100
R2	**Over-the-counter medicines with partial reimbursement**	2,049,343	1,913,266	7,502,800	7,727,800
R3	**Over-the-counter medicines without reimbursement by health insurance companies**	118,412	98,235	975,500	962,500
N	**Medicines not specified**	157,457	59,798	0	0
T	**Total**	11,860,420	12,786,880	13,452,000	15,277,700

Source: Statistical Office of the Slovak Republic

Capital expenditures

Volume of gross fixed capital formation represents a relatively stable item in the total expenditures on basic health care; however, its significance slightly decreases in time (Table 2.38).

Table 2.38 Volume of gross fixed capital formation (GFCF) and its share in total expenditures on basic health care (in constant prices of 1995)

	1995	1996	1997	1998	1999	2000
GFCF (thousand SKK)	2,383,752	2,435,134	2,546,639	2,165,296	2,103,716	2,105,105
Share of CFCF in total expenditures	7.4 %	5.7 %	5.8 %	5.2 %	4.9 %	4.7 %

3. Contingencies

In relation to the first two parts of this project, the main goal of the third part is to point out the importance of developing the connections among different subsystems of SHCS with subsequent implications for construction of prognostic model. Together with previous parts, this part also aims at establishment of a principal framework for the next parts of the project.

In order to understand the *functioning of the SHCS*, it is necessary to detail these issues:

1. principles of functioning of out-patient and in-patient health care focusing on the flow of patient through the system
2. methods of reimbursement of services and costs of health care establishments
3. principles of drug prescription and reimbursement of drugs and medical aids

In the following, the main fields of interest are introduced. The need to explore these issues deeply is essential; however, it is not the aim of this project. The following subchapters outline several areas which would have to be addressed in subsequent research studies.

3.1 Flow of patients in SHCS

Flow of patients through individual levels of health care system is guided by several specific factors. Firstly, incidence and prevalence of individual diseases and its complications affect the volume of patients seeking health care. Secondly, demography of population predetermines specific morbidity.

In Slovak Republic, each citizen has the right to choose his GP freely (agreement or contract is signed by the citizen and GP and valid for one year). Every citizen has to be registered by exactly one GP at one point in time. As follows, patient has a free choice as to whom he/she refers to when seeking health care. However, this possibility is often limited by mobility of citizens.

GPs decide on the way patient is treated; if necessary, they send patients to specialised out-patient or in-patient establishments directly. Patients often seek specialised services directly, mainly in gynaecology or dentistry. However, in acute cases concerning almost all services of basic medical disciplines (i.e. internal medicine, paediatrics, surgery, gynaecology and dentistry), patients go to specialists directly, without paying prior visit to their GPs.

Hence, patients suffering from chronic diseases may compromise the system when

seeking specialised services immediately as acute cases.

According to the aforementioned facts, annual numbers of patients and volumes of provided services in out-patient establishments (as well as trends of development of both) and annual numbers of hospitalised patients and treatment days in in-patient establishments (and trends of development of both) are to be focused on. Next, average length of stay in in-patient establishments is another parameter to pay attention to.

3.2 Methods of reimbursement of services and costs of health care establishments

Revenues from services based on volume of provided services define principal economic outcome of health care service providers. An analysis of the relationship between costs and outputs of SHCS and the development trends of both parameters during 1993 - 2001 would be interesting.

If possible, two categories of volume of services have to be determined; firstly, services actually provided and secondly, services actually reimbursed.

3.3 Drug prescription and reimbursement of drugs and medical aids

The trends in drug prescription and reimbursement of drugs and medical aids in relation to the volume of provided services are to be focused on, too.

4. Econometric model ISWE01q4

Macroeconomic econometric model ISWE01q4 was constructed on data contained in a database including more than 300 time series and over 80 exogenous and dummy variables. Time series from 1993q1 to 2001q2 were used in the process of estimating regress equations. The model contains almost 200 equations, more than 150 of which are identities and almost 50 have stochastic character. Program product SORITEC[1] was used for model construction and also for its application.

Time series of this model were extended and the behavioural equations were updated. In most cases, the equations were re-estimated in the same specification and used the same explanatory variables as the previous version of model - model ISWE01q2. A completely new block of equations was introduced, focusing on health care system.

In the following, the main behavioural equations are described[2]. The number of identities resulting from principles of national accounts or monetary review of National Bank of Slovakia is neglected. Similarly, attention is not paid to dummy variables capturing one-shot effects typical for economies during transition period. Such descriptions would only obscure the explanation of behaviour of the model.

4.1 Block of prices and deflators

Block of prices and deflators consists of equations capturing behaviour of particular deflators of GDP components and behaviour of price indices (consumer price index - CPI and producer price index - PPI).

4.1.1 Producer price index - PPI

PPI equation plays a key role in this block of prices and deflators. Model equation encompasses the influence of two most important price inputs into production - price of capital and price of labour[3] . Later on, PPI is used as an explanatory variable in the equations of CPI and deflators.

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[1] Detailed characteristics of this model can be found in (78).

[2] As an inspiration in the process of construction of this model, the information on other relevant models of Slovak economy was used - (83), (84), (85).

[3] Numbers in brackets show the t-statistics; R2 (coefficient of determination) and DW (Durbin-Watson's coefficient) are also reported.

PXI95 = 0.246 + 0.571*PMGSR + 0.0000211*WI + 0.0372*DERPOD
(7.59) (10.93) (6.42) (4.6)

$R^2 = 0.9863$ ***DW*** *= 1.61*

where

PXI95	*- producer price index (1995=1)*
PMGSR	*- deflator of imported goods and services (1995=1)*
WI	*- average monthly wage in industry (SKK)*
DERPOD	*- adjustment for state-regulated prices in the sector of industry*

Influence of *price of capital* is captured by deflator of imported goods and services due to high degree of openness of economy. It is presumed that majority of capital income, as well as technology, is necessarily imported. Price of labour is represented by means of average monthly wage in the sector of industry. The price trend is very deformed due to political decisions made in the past. Mainly, the adjustment of prices of energy, gas and transport is of great influence. Instrumental variable DERPOD captures and includes this factor into the equation.

4.1.2 Consumer price index - CPI

CPI of these days is more influenced by adjustment of regulated prices than by actual situation of the economic environment. CPI equation reflects to this reality by introducing instrumental variable DEREGOB. The second explanatory variable is PPI - producer price index.

PU95 = (-0.572) + 1.567*PXI95 + 0.0662*DEREGOB
(-18.8) (55.8) (7.67)

$R^2 = 0.9922$ ***DW*** *= 2.00*

where

PU95	*- consumer price index (1995 = 1)*
PXI95	*- producer price index (1995 = 1)*
DEREGOB	*- adjustment for regulated prices in the sector of households*

Previous versions of this equation contained other explanatory variables. Import surcharge and import prices described the reaction of consumer prices to exchange rate fluctuations. Money aggregate M2 described the reaction of prices to changes of money supply. However, these variables no longer explain the behaviour of CPI due to their low

statistical significance.

4.1.3 Deflators of GDP components

The following part introduces equations of deflators of GDP components. Foreign trade deflators are calculated in other block (see the part devoted to foreign trade).

The *deflator of private consumption* is estimated by means of consumer price index.

PC = 0.0614 + 0.965*PU95
(-3.0) (28.2)

R^2 *= 0.9974* ***DW*** *= 1.63*

where

PC *- deflator of private consumption (1995=1)*

PU95 *- consumer price index (1995=1)*

Similar to deflator of private consumption, *deflator of government consumption* is explained by consumer price index. The Durbin-Watson's coefficient signifies the presence of autocorrelation in the estimated equation. That is why Cochrane-Orcutt's method of estimation is used to re-estimate this equation.

PG = 0.475 + 0.577*PU95 + 0.827*(PG{-1} - (0.475 + 0.577*PU95{-1}))
(6.38) (10.1) (7.91)

R^2 *= 0.9916* ***DW*** *= 2.3*

where

PG *- deflator of government consumption (1995=1)*

PU95 *- consumer price index (1995=1)*

Deflator of gross capital formation is explained by means of producer price index. Similar to the case of government consumption, Cochrane-Orcutt's method of estimation is used.

PDFK = -0.121 + 1.194*PXI95 + 0.621*(PDFK{-1} - ((-0.121) + 1.194*PXI95{-1})
(-0.8) (9.2) (4.3)

R^2 *= 0.9563* ***DW*** *= 1.99*

where

PDFK *- deflator of gross capital formation*

PXI95 *- producer price index*

4.2 Block of labour market

This block consists of equations depicting labour market demand and, following from that, amount of unemployed persons and unemployment rate. In past, analyses to estimate labour supply by means of relevant real economy indicators were carried out. They showed that labour supply depends mostly on demographic factors. Labour supply is set as an exogenous variable here.

Number of employed persons (published according to statistical surveys) represents labour demand in the model. There is another methodology of measuring employment based on sample surveys of economic activity. Figure reflecting the second methodology can be inferred from the figure reflecting the first one. A system of identities helps to shift data between these two methodologies. This paper covers only the methodology of statistical surveys.

Estimation of labour demand under conditions of transition economy is a very hard task. It follows from restructuring of economic environment. Labour demand decreases more often due to restructuring of industry than due to economic cycles or other impacts coming from economic environment.

The model *labour demand* equation reflects impacts of wages, credits and exports. Dummy variable for restructuring of economy is added to the equation, too.

$$\underset{(3)}{lnL = 1.449} + \underset{(12)}{0.742*lnL(-1)} + \underset{(10.5)}{0.152*lnKACEH} + \underset{(-12.5)}{(-0.211)*lnW(-1)} +$$

$$+ \underset{(6.4)}{0.000886*lnEGSR(-1)} + \underset{(-7)}{(-0.00911)*ULL}$$

$R^2 = 0.952$ $DW = 1.95$

where

L *- number of employed persons*

KACEH *- accumulated credits to enterprises and households*

$KACEH = 0.5*ACEH + 0.5*ACEH(-1)$

W *- average monthly nominal wage*

EGSR *- exports of goods and services*

ULL *- dummy variable - restructuring of industry*

The equation is estimated in a logarithmic form. It describes decreasing labour demand as a consequence of increasing nominal wages. This corresponds to reality since employers really prefer declining employment when wages grow. Employment brings about a high rate of inertia. The amount of credits to enterprises and households presents new money resources to entrepreneurs. Amount of exports shows the performance of enterprises. Growing export causes growth of income, which increases production and, as a consequence, labour demand becomes greater.

Number of unemployed persons is calculated as a difference between economically active population and labour demand. *Unemployment rate* is computed as a ratio of the number of unemployed people and the number of economically active population of previous period.

LU = EAO - L

UR = LU / EAO(-1)

where

LU *- number of unemployed*

EAO *- economically active population*

UR *- unemployment rate*

L *- number of employed persons*

4.3 Block of population

Equations depicting current incomes and expenditures of population in the system of National accounts are described in this part. Equation of nominal monthly wage plays a key role in this block. Labour income of population is calculated from monthly wage. Consequently, social benefits, gross mixed income and other income are computed from labour income. Other incomes represent the sums of incomes from property and other transfer benefits. Other income is set as an exogenous variable, mainly due to its inconsiderably low share in total income.

Several particular types of current expenditures are calculated from labour income of population, too. Current expenditures include social and other expenditures. Particular tax expenditures are considered current expenditures as well. Particular tax expenditures are described in another part of this work.

4.3.1 Current incomes of population

Average nominal monthly wage equation plays a key role in this block. Analyses show high interdependency between nominal wage and consumer prices. This is caused mostly by great influence of trade unions. Unions try to compensate the growth of consumer prices caused by impacts coming from the decision sphere in this way.

$$W = 5.55 + 7.05*PU95\{-1\} + (-0.216)*URD + 1.19*T4 + 0.928*$$
$$(1.7) \quad (2.7) \quad (-3.9) \quad (12.3) \quad (17.7)$$
$$*(W\{-1\} - (((5.55 + 7.048*PU95\{-2\}) + (-0.216)*URD\{-1\}) + 1.193*T4\{-1\}))$$

$R^2 = 0.9791$ $DW = 2.27$

where

W	*- average nominal monthly wage*
PU95	*- consumer price index (1995 = 1)*
URD	*- unemployment rate*
T4	*- seasonal variable for the 4th quarter*

The equation shows positive influence of consumer price index (lagged by one period) on nominal wage. Other significant variable is the unemployment rate. In case of growing unemployment, employers can afford to offer lower wages to potential employees as there are enough employees ready to accept this wage at the labour market at that time.

Time factor is highly significant as well. Fourth quarter is specific of extra wages and premium payments received by employees. This increases their nominal wage. That is why seasonal variable T4 is included in the equation. On average, nominal wage increases by 1 200 SKK in the 4th quarter of year.

Average nominal wage serves as a basis for calculation of nominal wage in the sector of industry.

$$WI = (-735.3) + 889.2*W + 1888.9*PU95$$
$$(-4.4) \quad (24.7) \quad (5.4)$$

$R^2 = 0.9953$ $DW = 2.11$

where

WI	*- average nominal monthly wage in the sector of industry*
W	*- average nominal monthly wage*

PU95 *- consumer price index (1995 = 1)*

Average nominal monthly wage in the sector of industry is derived from nominal wage in whole economy. It is evident that the wage in industrial sector is lower than the general wage. Second functional relationship is depicted via consumer price index.

Average monthly wage and number of employed persons are the building stones on which calculation of gross wages and salaries is based.

YW = 3*W*L

where

YW	*- gross wages and salaries*
W	*- average nominal monthly wage*
L	*- number of employed persons*

Gross wages and salaries represent an important explanatory variable in the equations of other types of population income, such as other incomes of employees. These incomes stand for such money compensation for labour that is not included in wages.

OPZ = 1.949 + 0.271*YW
(2.4) (20.5)

R^2 *= 0.9231* ***DW*** *= 2.34*

where

OPZ	*- other incomes of employees*
YW	*- gross wages and salaries*

Another important part of incomes is represented by social benefits.

SD = (-1.317) + 0.456*SO{-1} + 0.248*URD + 0.435*SD{-1}
(-1.4) (7.3) (2.8) (6.7)

R^2 *= 0.975* ***DW*** *= 2.1*

where

SD	*- social benefits*
SO	*- social expenditures*
URD	*- unemployment rate*

Social benefits are explained by social expenditures of population, unemployment rate and social benefits one period lagged. Social expenditures represent disposable sources for repayment in the form of social benefits. Unemployment rate represents the number of people in need of social benefits. One period lagged social benefits capture an inertia aspect of explained variable (it is probable that one who received social benefits a period ago also receives them at present).

Gross mixed income share of total current income of population amounts to 40 %. Gross wages and salaries, unemployment rate and seasonal variable explain this type of income in the model equation.

$$HZD = -10.4 + 0.549*YW + 0.774*URD + (-5.33)*T3$$
$$(-3.2) \quad (10.2) \quad (3.2) \quad (-4.9)$$

$R^2 = 0.9249$ $DW = 1.64$

where

HZD *- gross mixed income*

YW *- gross wages and salaries*

URD *- unemployment rate*

T3 *- seasonal variable for the 3rd quarter*

Current incomes of population represent the sum of particular incomes mentioned above.

$$BPO = YW + OPZ + HZD + SD + IPO$$

where

BPO *- current incomes of population*

YW *- gross wages and salaries*

OPZ *- other incomes of employees*

HZD *- gross mixed income*

SD *- social benefits*

IPO *- other income of population*

4.3.2 Current expenditures of population

Social expenditures, together with income tax (see the part devoted to state budget), stand

for the main items ion current expenditures. Gross wages and salaries are used to explain the behaviour of social expenditures. Gross wages and salaries serve as a base for calculation of social expenditures.

$$SO = \underset{(3.6)}{4.29} + \underset{(17)}{0.34}*YW + \underset{(-3)}{(-3.18)}*U972$$

$R^2 = 0.9348$ $DW = 1.99$

where

SO - *social expenditures*

YW - *gross wages and salaries*

U972 - *dummy variable*

Current expenditures are calculated as a sum of social expenditures, taxes and other expenditures.

$$BVO = IVO + DANE + SO$$

where

BVO - *current expenditures of population*

IVO - *other expenditures*

SO - *social expenditures*

DANE - *income tax plus direct taxes paid by population*

4.3.3 Gross disposable income and gross savings of households

Gross disposable income represents a difference between current incomes of population and current expenditures.

$$HDD = BPO - BVO$$

where

HDD - *gross disposable income*

BPO - *current income of population*

BVO - *current expenditures of population*

Gross disposable income represents the fortune that households use either on consumption or savings.

HUD = HDD - CP

where

HUD *- gross savings of households*

HDD *- gross disposable income*

CP *- consumption of households, in current prices*

4.4 Foreign trade block

This block consists of four basic equations depicting the behaviour of foreign trade. These equations describe quantity of imports and exports in constant prices and they also capture import and export prices. The equations are estimated in a logarithmic form. Import and export equations relate to the GDP block. Prices of import serve as an input into the equation of producer price index.

4.4.1 Import of goods and services

lnMGSR = -1.11 + 1.13*lnDOP - 1.19*lnPM1 + 0.11*UM
(-3.44) (17.49) (-9.57) (7.83)

R^2 *= 0.98* ***DW*** *= 2.36*

where

MGSR *- import of goods and services, in constant prices*

DOP *- domestic demand*

lnPM1 *= ln (PMGSR / PU95)*

PMGSR *- import prices*

PU95 *- consumer price index*

UM *- instrumental structural variable*

Import of goods and services is mostly influenced by demand for imports and price competition. Domestic demand is considered a sum of investments and private and government consumption. The equation shows that 1 % increase in domestic demand leads to higher than 1 % growth in imports. This is a specific characteristic of Slovak economy. As for price competition, import prices are assumed to compete with the prices on domestic market. Negative elasticity of price variable can be observed, implying that increasing import prices lead to decreasing Slovak import. On the other hand, growth of domestic prices leads

to increased import of competitive products.

4.4.2 Export of goods and services

lnEGSR = -2.71 + 0.708*lnMDSK{-1} - 1.09*DlnPE1 - 0.088*T1 + 0.104*UE
(-21.88) (58.87) (-9.76) (-10.32) (12.16)

R^2 *= 0.99* ***DW*** *= 1.93*

where

EGSR *- export of goods and services*

lnMDSK *= ln (MDP*USDSK)*

MDP *- amount of import of developed countries, in USD*

USDSK *- exchange rate SKK/USD*

lnPE1 *= ln (PEGSR / (KURZ0_75 * UIMD95))*

PEGSR *- export prices*

KURZ0_75 *= 0.25*USDSK + 0.75*EURSK*

EURSK *- exchange rate SKK/EUR*

DlnPE1 *= lnPE1 - lnPE1{-1}*

UIMD95 *- prices of import of developed countries, per unit*

T1 *- seasonal variable for the 1st quarter*

UE *- instrumental structural variable*

Demand of neighbouring countries for Slovak *exports* is a key variable of this equation. Increasing world export leads to growing Slovak export. It can be seen that this relationship takes a form of time lag in the equation. Price ratio is another explanatory variable. Price competition has to be taken into account again. Increasing Slovak export prices lead to decreasing foreign demand for domestic goods and services. Exchange rate must be also considered in the case of prices. Exchange rate basket is introduced here. Analyses of main Slovak export territories stand behind the idea of higher share of EUR (compared to USD) in the exchange rate basket.

4.4.3 Import prices

lnPMGSR = -4.07 + 1.17*lnP4{-1} + 0.106*UPM + 0.108*UM97
(-19.84) (19.62) (11.01) (10.94)

R^2 *= 0.98* ***DW*** *= 1.96*

where

PMGSR *- import prices*

lnP4 *= ln (UEXD95 * KURZ0_4)*

UEXD95 *- prices of export of developed countries, per unit*

KURZ0_4 *= 0,6*USDSK + 0,4*EURSK*

USDSK *- exchange rate SKK/USD*

EURSK *- exchange rate SKK/EUR*

UM97 *- dummy variable; 0 until 1996q4, 1 from 1997q1onwards*

UPM *- instrumental structural variable*

Import prices are highly sensitive to external environment. They are connected to world export prices. World export prices represent the main explanatory variable in import prices equation. It is necessary to use exchange rate basket[4] in this equation again. Slovak import is mostly oriented on raw materials such as oil, gas, iron ore, etc. The trade is done mostly in USD currency. Because of this, the share of USD in used exchange rate basket is higher this time.

4.4.4 Export prices

lnPEGSR = -0.423 + 0.89*lnPXI95{-1} + 0.122*lnP1{-1} + 0.102*UPE
(-4.03) (58.04) (4.10) (15.32)

R^2 *= 0.99* ***DW*** *= 1.63*

where

PEGSR *- export prices*

PXI95 *- producer price index (1995 = 1)*

lnP1 *= ln (UEXD95 * KURZ0_75)*

UEXD95 *- prices of export of developed countries, per unit*

KURZ0_75 *= 0.25*USDSK + 0.75*EURSK*

USDSK *- exchange rate SKK/USD*

EURSK *- exchange rate SKK/EUR*

UPE *- instrumental structural variable*

4. USD and EUR are the components of the exchange rate basket.

5. Study (87) deals with modeling of monetary development.

6. Only deposits in SKK are taken into account. Deposits in foreign currency are considered as quasi-money MQ.

Foreign prices are again included in Slovak *export price* equation. However, more important explanatory variable is represented by domestic producer prices. Country should not be able to export its products for prices that are lower than prices of production. Thus, if producer price grow the same is true for export prices (one period time lag is reported here). Lagged character of functional relationship is relevant in the case of foreign price trends. When constructing the exchange rate basket, territorial structure of Slovak export was considered. The EUR exchange rate dominates the exchange rate basket used in the equation of export prices.

4.5 Monetary block

Structure of monetary block equations results from the framework of monetary survey. Monetary survey is periodically issued by the National Bank of Slovakia (NBS). The assumption on which construction of equations is based is the equality of assets and liabilities of monetary survey. Liabilities are presented by particular kinds of bank deposits. Assets are presented by credits[5] . Monetary survey published in current exchange rate is used.

Currency outside banks M0, as a sub-aggregate of M1, is expected to be under the influence of policy of the National Bank. The development of M0 is simulated by following equation.

M0B = 1.82 + 0.990*M0B{-1} + 1.01*UM0
(10.2) (247.1) (50.2)

R^2 *= 1.00* ***DW*** *= 1.82*

where

M0B *- currency outside banks (bill. SKK, current prices)*

UM0 *- dummy variable simulating the impacts of NBS policy*

The equation shows an autoregressive character of M0 aggregate. Present state of currency is highly determined by its state in previous period. Dummy variable represents the policy of National Bank of Slovakia.

Demand deposits of households[6] , as a component of currency, are mostly used to serve households' financial needs. An assumption is made that this kind of deposits is independent of its interest rate.

MCHB = 22.8 + 0.749*MCHB{-1} + (-1.056)*IRTH
(7.69) (16.63) (-8.65)

R^2 *= 0.98* ***DW*** *= 1.48*

where

MCHB *- demand deposits of households, bill. SKK, current prices*

IRTH *- average interest rate on time and saving deposits of households*

Demand deposits are to 75 % explained by their past development. Modifying factors also playing role here are interest rates on time and savings deposits. It is presumed that when interest rates on time and saving deposits grow households start to prefer those and place their financial resources in banks on time and saving deposits. Households move their financial resources from demand deposits in advantage of time and saving deposits.

Tendencies in demand deposits of enterprises and insurance companies are similar but differently timed and conditioned.

$$\underset{(44.18)}{MCEIB = 12.1} + \underset{(178.79)}{0.476*PINDP} + \underset{(-176.49)}{(-1.74)*MFEB} + \underset{(106.23)}{36.2*DU00Q3} + \underset{(145.89)}{0.989*UMCE}$$

$R^2 = 0.995$ $DW = 1.75$

where

MCEIB *- demand deposits of enterprises and insurance companies, bill. SKK, current prices*

PINDP *- income from industrial activities, bill. SKK, current prices*

MFEB *- deposits in foreign currency, bill. SKK, current prices*

DU00Q3 *- dummy variable (change in 2000q3)*

UMCE *- dummy variable (impacts of the environment)*

Demand deposits of enterprises and insurance companies are used to serve current transactions connected to activities of companies and their production. That is why the production of industry is an important explanatory variable. Another modifying variable is the volume of deposits in foreign currency. Reason for introducing this variable lies in the structure of Slovak industry. Large share of total production of Slovak industry depends on imports. In times when deposits in foreign currency are attractive, they are preferred to demand deposits of enterprises and partly push those out.

Volume of money M1 is calculated simply as a sum of demand deposits of households, enterprises and insurance companies. Therefore, special attention is not paid to M1.

Volume of time and saving deposits of households stands for the most important part in liabilities of monetary survey of National Bank of Slovakia.

Equation describing the change in *time and saving deposits* (DMTHB) is used in the model.

DMTHB = (-12.39) + 0.675*HUD + 0.921*IRTH + 0.988*UDMTH
(-38.61) (83.98) (33.93) (76.21)

R^2 *= 0.99* ***DW*** *= 2.31*

where

DMTHB *- time and saving deposits of households, bill. SKK, current prices*

HUD *- gross savings of households, bill. SKK, current prices*

IRTH *- average interest rate on time and saving deposits of households*

UDMTH *- dummy variable*

The most important explanatory variable in this equation is the volume of gross savings of households which represents gross disposable income of households diminished by nominal final consumption of households. It can be seen from the equation that 0.68 SKK of each additional SKK of savings is used on time and saving deposits. Increasing interest rates on time and saving deposits lead to growing time deposits. Dummy variable represents additional impacts, e.g. payment of saving bonuses.

Volume of *time and saving deposits of enterprises and insurance companies*[7] declined in the year of 1988. This decline was caused by currency depreciation expectations. In 1999 and 2000, this volume grew again. The growth was caused by stabilization of economic situation of enterprise environment. The trend is explained by following equation.

MTEIB = -8.00 + 0.729*MTEIB{-1} + 0.137*PINDPK + 0.295*YZ1K
(-1.03) (4.74) (1.89) (1.18)

R2 *= 0.86* ***DW*** *= 1.51*

where

MTEIB *- time and saving deposits of enterprises and insurance companies, bill. SKK*

PINDPK *- production of industry (cumulated)*

YZ1K *- profits of non-financial organizations, bill. SKK*

Volume of time and saving deposits of enterprises and insurance companies proves an autoregressive character. Modifying factors are represented by positive influence of cumulated industrial production and profits of non-financial organizations. This means that 1 billion growth of corporation profits leads to an average 295 million increase in deposits.

7. *More accurately - the time and saving deposits in SKK..*

Deposits of households in foreign currency grew significantly in the year of 1998 due to currency depreciation expectations. Deposits grew by 50 % in 1998, were stable in 1999 and grew again by 10 % in 2000.

$$MFHB = -42.53 + 0.926*USDSK + 1.291*EURSK$$
$$(-5.58) \quad (9.46) \quad (5.01)$$

$R^2 = 0.98$ $DW = 1.98$

where

MFHB *- deposits of households in foreign currency, bill. SKK, current prices*

USDSK *- exchange rate SKK/USD*

EURSK *- exchange rate SKK/EUR*

As can be concluded from the equation, volume of credits in foreign currency is highly impacted on by trends in development of exchange rate between SKK and key foreign currencies. If domestic currency depreciates credits in foreign currency become more attractive and their volume grows.

Credits of enterprises in foreign currency respond to depreciation expectations as well, but in a different way than credits of households. In the year of 1988, they increased by 155 % because of change of exchange rate regime in autumn of that year. Deposits grew by 28 % in 1999 and by another 55 % in 2000 since deposits in USD were more profitable then.

$$MFEB = -58.68 + 0.231*MFEB\{-1\} + 1.85*KURZ0\_4$$
$$(-4.42) \quad (1.37) \quad (4.60)$$

$R^2 = 0.89$ $DW = 1.97$

where

MFEB *- credits of enterprises in foreign currency, bill. SKK, current prices*

KURZ0_4 *- exchange rate basket: 60 % SKK/USD, 40 % SKK/EUR*

A partial autoregressive character of credits of enterprises in foreign currency can be detected. This is due to fact that these credits are partly used to serve financial transactions of enterprises. Exchange rate also plays an important role.

Enterprises reflected the depreciation expectations of 1998 significantly, therefore the high profitability of USD deposits in 2000.

Volume of quasi money QM is simply a sum of volume of time and saving deposits and deposits in foreign currency. Money aggregate M2, called liquid liabilities or money supply,

is a sum of quasi money and money. These items constitute the liabilities side of NBS money survey.

On the first place of the assets side of NBS monetary survey, net foreign assets and net domestic assets are placed. Their proportions change much during year.

Net foreign assets decreased almost by one half in 1998, being under the influence of disadvantageous trends in balance of payment. They grew again in 1999 and 2000 due to improvement of particular components in balance of payment.

Trends in net foreign assets are transposed to the trends in net domestic assets. Main components of net domestic assets are credits to enterprises and households and credits to government and Fund for National Assets. Growth of net domestic assets is usually absorbed by development of net position of government sector, due to deficit performance of government.

Net credits to government and grew almost by one half in 1998. This growth decelerated significantly in 1999. In 2000, a marked growth was reported again. The volume of net credits to government and Fund for National Assets is estimated by following equation depicting changes in its behaviour.

$$\underset{}{\textbf{DANCGFB} = 0.903 + 0.998*\textbf{FDEF} + 117.4*\textbf{DU01Q1}}$$
$$\underset{}{(0.44) \qquad (3.27) \qquad (13.28)}$$

$R^2 = 0.89$ $\quad$ **DW** $= 1.81$

where

DANCGFB - *net credits to government and Fund for National Assets (change), bill. SKK, current prices*

FDEF - *fiscal deficit, bill. SKK, current prices*

DU01Q1 - *dummy variable - classified credits*

As can be concluded from the equation, the change in net credits to government reflects the fiscal deficit. One-shot impacts occur mostly in the field of accountancy of classified credits. These credits were moved from commercial banks into placed into the class of assets of government.

Trends in development of credits to households and enterprises prove slower dynamics than total assets. The volume of credits slightly grew in the years of 1998 and 1999. Their volume stagnated in 2000.

ACEHB = 63.86 + 1.09*ANDB + (-1.05)* ANCGFB
(5.47) (24.83) (-19.34)

***R2** = 0.97 **DW** = 1.58*

where

ACEHB - credits to households and enterprises, bill. SKK, current prices

ANDB - net domestic assets, bill. SKK, current prices

ANCGFB - net credits to government and Fund for National Assets, bill. SKK, current prices

The volume of *credits to households and enterprises* is, on the one side, limited by development of net domestic assets. On the other side, it is negatively influenced by growing net credits to government and Fund for National Assets.

Special attention is paid to the interest rate on time deposits although other various interest rates are statistically available. Nevertheless, behaviour of households is best explained by this one.

IRT = 1.47 + 1.08*IRU_REPO + (-0.337)*UFIX + (-3.75)*DU01Q1 + 0.951*UIRT
(4.39) (3T.38) (-3.83) (-19.50) (35.79)

***R²** = 0.99 **DW** = 2.25*

where

***IRT** - average interest rate on time deposits (total)*

***IRU_REPO** - discount rate /REPO rate of NBS*

***UFIX** - dummy variable, 0 = floating exchange rate, 1 = fixed exchange rate*

***DU01Q1** - dummy variable for 2001q1*

***UIRT** - dummy variable depicting one-shot impacts*

The development of *interest rates on time deposits* is explained by tools used by NBS. On the one side, it is a composite variable depicting discount and REPO rates. On the other side, it is a variable describing the character of used exchange rate regime.

Time deposits of households have the biggest share (almost one half) in total money supply. The average level of interest rates on time deposits of households was above 12 % in 1998 and 1999. In 2000, interest rates fell to the level of 8 %. As high inflation was reported then, this decline brought about negative real interest rates.

IRTH = (-0.474) + 1.04*IRTH{-1} + 0.990*DIRT
(-2.61) (61.49) (22.23)

R^2 *= 0.99* ***DW*** *= 2.24*

where

IRTH *- average interest rates on time deposits of households*

DIRT *- average interest rate on time deposits - total (change)*

Interest rates on time deposits of households depend on their level as of previous period and on current change of total interest rate. Similar philosophy is mirrored in other types of interest rates, too.

IRTG = 1.33 + 0.890*IRTG{-1} + 1.12*DIRT
(3.10) (24.64) (10.41)

R^2 *= 0.97* ***DW*** *= 1.92*

where

IRTG *- average interest rate on time deposits - public sector*

DIRT *- average interest rate on time deposits - total (change)*

IRTP = 1.23 + 0.905*IRTP{-1} + 1.15*DIRT
(2.75) (25.61) (9.55)

R^2 *= 0.98* ***DW*** *= 1.88*

where

IRTP *- average interest rate on time deposits - enterprise sector*

DIRT *- average interest rate on time deposits - total (change)*

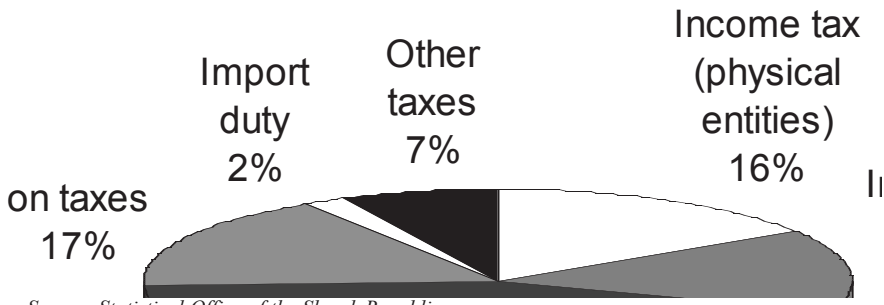
Monetary block relies on data contained in monetary survey of National Bank of Slovakia. Particular behavioural variables of this block are explained by variables depicting real economy - namely industrial production and savings of households. State deficit, interfering with monetary block, comes from the block of state budget. Monetary variables serve as explanatory variables in other blocks of the model (such as block of investment, employment, etc.), too.

4.6 Block of state budget

This part describes equations of income (mostly tax income) of state budget, which is calculated. State budget expenditures depend more on political gathering in the time of

budget building than on economic reality. This part does not refer to these aspects. Tax income of each kind is estimated.

Graph 4.1: Share of taxes in the first half of 2001



Source: Statistical Office of the Slovak Republic

4.6.1 Income tax (natural persons)

This tax presents almost 16 % of total tax incomes. Estimation of its development takes a logarithmic form.

$$lnTW = -4.291 + 1.517*lnYW(-1) + 0.708*lnYW + (-0.113)*T3 + (-0.291)*U001$$
$$(-13.3) \quad (18.9) \quad (6) \quad (-4) \quad (-8)$$

$R^2 = 0.949$ $DW = 2.12$

where

TW *- income tax (natural persons)*

YW *- gross wages and salaries*

T3 *- seasonal variable for the 3rd quarter*

U001 *- dummy variable for2000q1*

State budget incomes in the form of *income tax* are based on gross wages and salaries. The change of this variable is relevant, too, due to progressive character of tax payments and moving to higher tax rates as income grows. Dummy variable depicting the 1st quarter of 2000 represents the period when the tax rates were lowered and, consequently, income tax declined.

4.6.2 Income tax (juridical persons)

This amount of this tax represents about 15 % of total tax incomes. The collection of this tax is extensively complicated as the tax payers are prone to lower their tax base legally or illegally.

$$\underset{(16.1)}{TYZ} = \underset{(4.8)}{4.07} + \underset{(16)}{0.0806}*YZ1K + \underset{(10.4)}{0.219}*ACEH + \underset{(14.1)}{1.756}*T1 + \underset{(16.4)}{19.877}*U011 + 0.947*UTYZ$$

$R^2 = 0.972$ $DW = 2.24$

where

TYZ *- income tax (juridical persons)*

YZ1K *- cumulative profit*

*(YZ1K = 0.4*YZ1 + 0.3*YZ1(-1) + 0.2*YZ1(-2) + 0.1*YZ1(-3))*

ACEH *- credits to enterprises and households*

T1 *- seasonal variable for the 1st quarter*

U011 *- dummy variable for2000q1*

UTYZ *- dummy variable*

Income tax collected from juridical persons is based mostly on their profits. Increasing credits to enterprises promote not only the growth of investments but also the performance liquidity. This helps to increase profitability and subsequently the tax incomes grow. Seasonal variable describes that period of year when the taxes are collated.

4.6.3 Value added tax

VAT makes about 43 % of total tax incomes. It is the tax income with the highest share.

$$\underset{(16.5)}{TVAT} = \underset{(7.4)}{8.847} + \underset{(20.9)}{0.288}*TVAT(-1) + \underset{(17.3)}{0.114}*CGKP + \underset{(23.7)}{3.25}*U99q3 + 0.973*UTVAT$$

$R^2 = 0.992$ $DW = 2.0$

where

TVAT *- value added tax*

CGKP *- internal demand (C+G+I), current prices*

U993 *- instrumental time variable*

UTVAT *- dummy variable*

As VAT is concerned, an inertia effect can be observed. This implies from the assumption that under unchanged conditions the same level of consumption is kept. Another explanatory variable is the change of internal demand. This one stands for the taxation base.

4.6.4 Consumption taxes

Consumption taxes represent 17 % of total tax incomes. Because of limited availability of relevant data describing particular kinds of tax incomes, an aggregate is estimated.

$$TC = 2.47 + 0.657*TC(-1) + 0.0194*CP + (-1.77)*T1 + 0.243*T3 + 1.01*UTC$$
$$(62.9) \quad (109.9) \quad (8.8) \quad (-97.7) \quad (13.8) \quad (82.2)$$

$R^2 = 0.999$ $DW = 2.6$

where

TC *- consumption taxes*

CP *- final private consumption, current prices*

T1 *- seasonal variable for the 1st quarter*

T3 *- seasonal variable for the 3rd quarter*

UTC *- dummy variable*

Similar to VAT, consumption taxes are affected by the inertia effect. The reason lies in non-radical changes in the development of life style. Seasonal variable T3 represents holiday season which is traditionally connected with higher consumption.

4.6.5 Import duty

Import duty represents a rather small share - about 2 % - of total tax incomes. The share continuously declines due to EU accession and WTO pressures to lower the duties.

$$TDU = -1.51 + 0.209*TDU(-1) + 0.0068*MGSPR + 2.18*UDU + 0.864*UTDU$$
$$(-19.2) \quad (9.1) \quad (23.8) \quad (42.1) \quad (23.1)$$

$R^2 = 0.996$ $DW = 2.7$

where

TDU *- import duty*

MGSPR *- import of goods and services, current prices*

UDU *- tariffs*

UTDU *- dummy variable*

Import duty is affected by inertia, too. It also depends on the volume of import of goods and services. Variable UDU represents continuously diminishing duty tariffs.

4.7 Block of GDP

In the block of GDP the variables of domestic demand are calculated. These particular components are calculated in current prices and then, by means of deflators, re-calculated into constant prices (see the part "Block of prices and deflators"). Adding the foreign trade balance (part "Foreign trade") to the domestic demand, final GDP as an indicator of performance of the economy is computed.

In the following part, two main equations (equation of final private consumption and the one of gross fixed capital formation) of this block are described. Final consumption of the government is dependent on political decisions. Character of gross stock formation is very stochastic and proves an unpredictable development. As follows, the last two components of domestic demand are set as exogenous.

4.7.1 Final private consumption

Crucial explanatory variable of equation of *final private consumption* is the gross disposable income of households. Previous analyses and conclusions implied by them serve as a basis for estimation of this equation. By assumption, behaviour of private consumption is more Keynesian than neoclassical[8] .

$$CP = 5.767 + 0.85*HDD + (-11.686)*T4 + 0.0235* L$$
$$(3.1) \quad (48.7) \quad (-14.1) \quad (2.4)$$

$$R^2 = 0.9924 \quad DW = 2.08$$

[8] *Bors L., Kvetan V., Vokoun J., Páleník V.: Short-term and mid-term coherence of gross capital formation and savings in SR. Bratislava, SAS, April 1999.*

where

CP *- final private consumption (bill. SKK, current prices)*

HDD *- gross disposable income (bill. SKK, current prices)*

T4 *- seasonal variable for the 4th quarter*

L *- change in employment L = L - L(-1)*

Having analysed the equation it can be concluded that about 85 % of the disposable income is used for the private consumption. The change in employment is considered as a psychological factor of the consumption. It is assumed that employed person consumes more than one which is unemployed and has no secure income. The seasonal variable for the 4th quarter shows that not all increased income is spent on consumption.

4.7.2 Gross capital formation

Gross capital formation represents the amount of investments[9] . Model equation includes particular kinds of financial resources to provide them.

$$DFKP = \underset{(-9.3)}{(-35.47)} + \underset{(25.2)}{0.271}*ACEHB + \underset{(-15.1)}{(-0.695)}*YZ1 + \underset{(4.4)}{0.915}*CE + \underset{(3.2)}{0.186}*CFP + \underset{(-5.2)}{(-6.102)}*T1 + \underset{(9.7)}{1.414}*INVO$$

$R^2 = 0.9903$ $DW = 2.37$

where

DFKP *- gross capital formation*

ACEHB *- credits to households and enterprises*

YZ1 *- profit of profit companies*

CE *- capital expenditures of state budget*

CFP *- credits from abroad*

T1 *- seasonal variable for the 1st quarter*

INVO *- dummy variable*

Credits to households and enterprises are one of the sources for financing investments. Other source is represented by profits of companies. Negative sign reflects the

[9] *Investments such as buildings, machines, technologies, etc. are considered. Financial investments are not taken into account.*

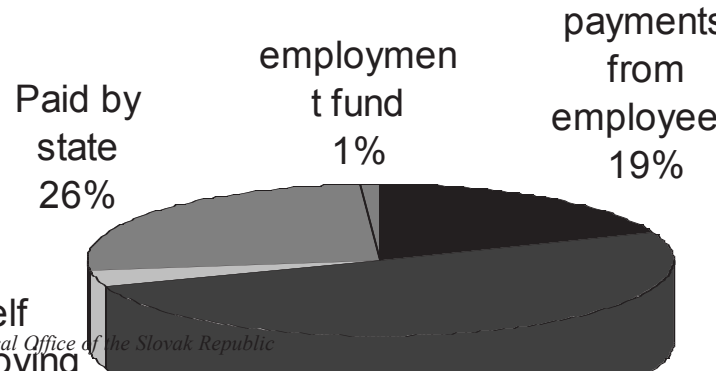
character of accountancy system - if the investments are high the profit report of organization is low in the same period. Capital expenditures of state budget are very important as well. It is necessary to coordinate them with budget possibilities and performance of economy. The capital expenditures of state budget were too high during the past years, leading into high imbalances. Credits from abroad are important mostly in a qualitative way. Seasonal variable for the first quarter describes decline in investments at the beginning of the year.

4.8 Block of health insurance system incomes

To serve the needs of this paper, existing econometric model was extended by a block of health insurance incomes. The incomes paid by particular types of payers (employers, employees, unemployed, etc.) are calculated in this block.

This block is divided into three parts. Equations of employment payments constitute the first part. Payments from unemployed persons are included in the second part. Payments of state are contained in the third part.

Graph 4.2: Health insurance income in the year of 2000



Source: Statistical Office of the Slovak Republic

4.8.1 Payments from employment

In this part the *payments from employers*, employees and self-employed persons are calculated. These incomes are estimated by means of regression equations. Equations are based on the estimation by means of income of population.

$$PZ1 = -1552.23 + 26.51 * OZ$$
$$(-1.5) \qquad (7.8)$$

$R^2 = 0.938 \qquad DW = 2.16$

where

PZ1 *- incomes of health insurance system paid by employees*

OZ *- rewards of employees*

$$PZ2 = 247.51 + 58.54*OZ$$
$$(0.2) \quad (12.7)$$

$R^2 = 0.976$ $DW = 1.97$

where

PZ2 *- incomes of health insurance system paid by employers*

OZ *- rewards of employees*

$$PSZCO = (-19.31) + 5.11*YW$$
$$(-0.2) \quad (9.0)$$

$R^2 = 0.953$ $DW = 1.71$

where

PSZCO *- incomes of health insurance system paid by self-employed*

YW *- gross wages and salaries*

As can be seen, *incomes of health insurance system* are determined by the incomes of population to a great extent.

4.8.2 Payments for unemployed

Health insurance for unemployed is paid from two sources. National Institute of Labour pays to health insurance system for those unemployed who receive unemployment benefits. State pays for those who do not receive unemployment benefits.

$$PLUNUP = LU*QNUP* NUP1$$
$$PLUROZ = LU*(1-QNUP) * ROZ1$$

where

PLUNUP*- payments for unemployed receiving unemployment benefits*

PLUROZ*- payments for unemployed not receiving unemployment benefits*

LU *- number of unemployed*

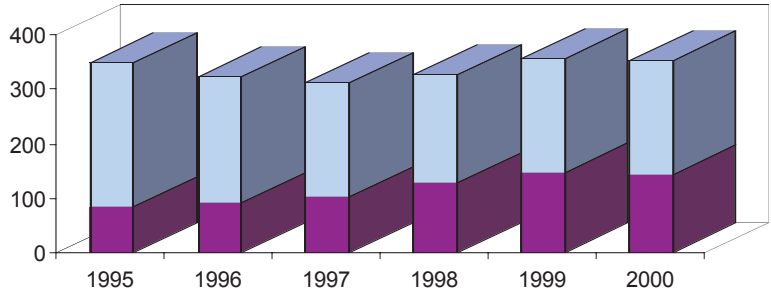
QNUP *- share of unemployed receiving unemployment benefits on total*

NUP1 *- unit payment of National Institute of Labour per one unemployed*

ROZ1 *- unit payment of state per one unemployed*

Payments of state and NIL are calculated as identities. These identities represent the products of number of unemployed, share of particular group of unemployed on total and payment per unit.

Graph 4.2: Number of the unemployed in years 1995 - 2000



4.8.3 Payments of the state

State pays to health insurance system for unemployed (as mentioned above), unprovided-for children, retired people and other state policyholders.

Unprovided-for children are considered children aged 0 - 14 and also children belonging to a part of age group 15 - 24 (almost 60 %). High school and university students with any regular income are placed in category 15 - 24.

Retired people are considered people aged 60 or more. A part of age group 55 - 59 also belongs to this category. Women and prematurely retired men are found in this category, too.

Other state policyholders are persons taking care of a baby, young men on military service, etc.

Equations for calculating payments of these three groups are identities. The calculation represents a product of number of persons in the particular group and unit payment stated according to the relevant legislation.

PDETI = DETI*PDETI1

PDOCH = DOCH*PDOCH1

POST = OST*OST1

where

PDETI *- payments for unprovided-for children*

DETI *- number of children*

PDETI1 *- unit payment for a child*

PDOCH *- payments for retired persons*

DOCH *- number of retired persons*

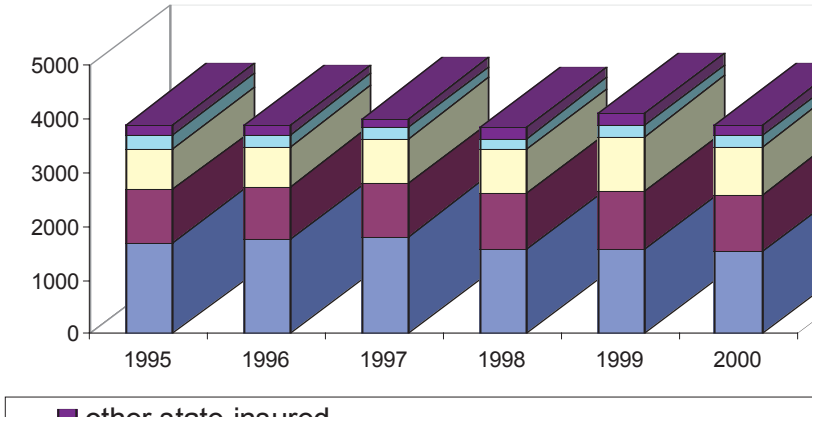
PDOCH1 *- unit payment for a retired person*

POST *- payments for other policyholders*

OST *- number of other policyholders*

POST1 *- unit payment for other policyholder*

Graph 4.3: State-insured persons in the years of 1995 - 2000



5. Trends in years 1995 - 2000

Macroeconomic development of health care system during the period of 1995 - 2000 was characteristic of several reverses. Some of them arose from overall macroeconomic development which was connected mainly to changes of economic policy after the general elections in the years of 1994 and 1998. Changes in trends of the development of health care system likewise followed from the results of parliamentary elections and in details, however, mainly from the individual laws on state budget.

The analysis of this period is divided into two parts: the first one is devoted to the overall macroeconomic development and the second one contains the macroeconomic development of the health care system.

5.1 Macroeconomic development in 1995 - 2000

The year of 1995

The recovery of economy, which continued in 1995 and referred to the development of 1994, manifested itself in productive and monetary aspects. Increasing industrial production and services and many-sided advance in strengthening macroeconomic equilibrium conformed to this. Pursuing the goal-directed, anti-inflationary monetary and fiscal policies market balance in its internal and external areas was maintained on satisfactory and even improving levels. Increasing labour productivity to a certain extent paralysed the factors causing violation of macroeconomic equilibrium and the price increase connected to that. In the year of 1995 total employment increased, which proved positively in the decline of unemployment. The slow-down of export dynamics in 1995 was influenced by inflation under fixed exchange rate regime of SKK. Inflation caused another reduction of the devaluation effect in exports. Reason for increase in import, which surpassed the dynamics of export, rested first of all in the accelerating growth of the Slovak economy. The dynamic recovery of the economy manifested itself in favourable development of balance of payments. The positive results were influenced mainly by suitable development of foreign trade. At the end of the year 1995 passive balance of payments arose in the Slovak Republic, which was caused by subsiding effects of aforementioned devaluation of SKK from the year 1993.

The year of 1996

In 1996 Slovak Republic continued to prove strong economic growth, which - starting from 1994 - replaced the period of transition recession. In comparison to previous years and different from the development during the transition process, in the year of 1996 (for the first time) a more significant decrease in exporting goods and services in constant prices (in 1993 this drop was only marginal) was reported. In contrast, thanks to the intensive augmentation of domestic demand, the annual growth rate of total demand reached record levels. The growth rate of used GDP stayed high, namely at the level of 1995. The growth of individual parts of domestic demand was uneven in 1996. The demand (expenditures) of state increased twofold in comparison with customer demand. In particular it was a consequence of expanding government investments into infrastructure, without which the demand of state would stay practically at the level reached in 1995. The growth rate of gross fixed capital formation was, on the whole, five times higher than the GDP growth rate, but was brought about by unusually high increase in the amount of stocks.

The ongoing fast growth of GDP in 1996 was on the supply side supported mainly by the fast growth in service sector (mainly as a consequence of rapid growth of value added)[10] and only in a small extent by the growth of production in production industries. The year 1996 was characteristic also by fast increase in intermediate consumption. The trend in dynamics of price development was still downward, however it became more complicated. The increase of nominal wages persisted, though in the year of 1996 it began influence unfavourably the whole development of economy. In this year also a subtle increase of employment was registered.

The unbalanced development of internal and external relations of the Slovak Republic in 1996, more expressively than that of other indicators, manifested itself in the development of the balance of payments. While the current account of the balance of payments ended up with the net surplus of about 20 billion SKK in 1995, the deficit reached nearly 60 billion SKK in the year 1996. This impressive deterioration was caused firstly by intense worsening of the trade balance, but also the surplus of the balance of services substantially decreased. The development of the balance of payments signalled that the dynamics of internal sources of

[10] *It was the display of shifting the ancillary activities of production units (supplying, sales, transport, security services, maintenance, etc.) onto the firms acting in the sphere of services. It is almost impossible to quantify whether requested efforts to make these supportive activities more effective, or the undesired effort to pour over the profits of the production units into the closed firms of talented privatisers, of successful privatisers, of management, or of dominant shareholders prevailed in these activities. Certainly, a part of the fast growth in the sphere of services can be attributed to the above described process, which proved a relative decrease in production and accelerated growth in the sphere of services (in spite of the fact that the national accounts are recorded according to the workshop units).*

economy had not till then created sufficient enough increase of resources for inevitable restructuring and that the arising imbalance could unfavourably affect the long-term stabilisation of domestic currency. Moreover, the bank balance of financial and capital accounts was accompanied by the decrease in growth rate of foreign direct investment and by the increase in share of credits, principally in the sphere of enterprises.

The ratified state budget of the Slovak Republic for 1996 arose from favourable economic transition results achieved in 1995, above all from the expected continuation of GDP growth, from the decrease of the inflation rate and from gradual growth of employment. The real results achieved during 1996 lagged behind the budgetary expectations, mainly from the point of view of assumed development of incomes of the Ministry of Finance, which were fulfilled only to 96.6 %. The biggest share of income constituted the indirect taxes. In comparison to 1995 the deficit of state budget significantly worsened. The level of the state debt, in spite of its increase in 1996, was still beneath the critical level set by the EU. In its structure, state external indebtedness decreased by accomplished debt service payments in 1996 and internal indebtedness - covered by the bills of credit - increased.

The programme of monetary policy of the National Bank of Slovakia (NBS) for 1996 set the objective of further strengthening of the internal and external stability of currency while maintaining the dynamics of the economic development of the Slovak Republic. The pretension of this anti-inflation monetary programme consisted namely of the fact that the planned decrease of inflation rate was connected with the support of real increase of GDP. In the effort to solve the monetary consequences of simultaneity of GDP increase and inflation decrease under growing debt of the balance of trade and decrease of foreign exchange reserves, the NBS approved of a partial correction of monetary programme and of a decrease in planned growth of M2 in May 1996. As followed, the NBS consequently approved of more vigour measures to regulate the external and internal activities of banks, mainly by lowering their liquidity (by increasing their mandatory minimum reserves, by setting the reserves for time deposits, by introducing a minimum ratio of foreign exchange debits to foreign exchange credits). The accepted arrangements brought results that became obvious by deceleration of yearly growth rate of money supply; on the other hand they began to create an unnecessary pressure on the increase of money price.

The year of 1997

In the year of 1997, the Slovak economy maintained its growth tendency; however, the GDP growth rate markedly slowed down (to the level of about 6.5 %). The growth tendencies

of internal and mainly external imbalances of the Slovak economy, perceivable in 1996, were to a full extent acknowledged in the year of 1997. From the point of view of the used GDP, the high dynamics of gross fixed capital formation was sustained; the growth tendency in the development of consumer demand continued; and the final consumption of state administration also gently increased. The balance of foreign trade activities was again importantly negative, though at a lower level than in 1996. Its development was influenced by the dynamics of exporting and importing of goods and services.

The improvement of the export of goods and services in current prices was reported only at the level of 3 %, which was markedly less than in 1996. Regarding the development of deflators of the parts of GDP, import registered even a subtle real decrease (-2.3 %). It was caused by the development of domestic demand, by the slow-down of the increase in industrial production and also by governmental measures in the first half of 1997. First of all, the government went on with the set-up of the import charge (which was imposed on many goods directed into intermediate consumption), with the issue of the certificates (which got stricter) and with imposing the quotas on some agricultural products and foodstuffs.

While in 1996 the export of goods and services in constant prices reported a gently lowering tendency, in 1997 the export growth achieved a little more than 6 %. This was made possible mainly by favourable trade boom in the countries of the EU and, following from that, by the growth of foreign demand of these countries - mainly the demand for products directed to productive consumption. That is why (in spite of the ongoing revaluation of the Slovak currency and thanks to the existing competitive advantage, chiefly in the form of lower labour costs) a space for certain expanding in this important segment of the world market was created for the Slovak producers. The measures of the economic policy centred on the support of exporting were up to that time not visible because they were subdued by the strong influence of trade boom in the countries which were the main business partners (with the exception of the Czech Republic). This is proved by the fact that the export dynamics, regardless of certain increase in 1997, lagged behind the favourable dynamics of the years 1994 and 1995.

Concerning the adverse balance of foreign trade of the Slovak Republic, it is suitable to mention the development in the Czech Republic. There, the deepening unfavourable balance of foreign trade was successfully covered by the surplus on the capital account of the balance of payments during several years. These tendencies, together with other factors, asked for more fundamental solutions, which expressed themselves mainly in the factual 10 % devaluation of the Czech crown. In view of about one third of share of the Czech Republic in the foreign trade of the Slovak Republic, it is possible to state that the development in the

Czech Republic had an important influence on the development of the Slovak economy in 1998.

The average inflation rate of consumer goods and services in 1997 was - with several fluctuations - maintained at the level of about a little above 6 %. The stabilising effect of abolishing the import charge at the end of 1997 was evident on the inflation rate. The experiments with the import deposits from May 1997 onwards had not long enough time duration to exert a quantifiable influence on inflation and net export. The government saw the solution of the increase of deficit balance of foreign trade of goods and services in the adoption of dominantly anti-importing measures (from which the most important was the extensive re-imposing of the import charges). Monetary policy - in the form of the development of monetary aggregate M2 - had also important influence on the inflation rate development. Repeated deficit balance of state budget caused a tension at the money market and brought about an increase in interest rates on credits which are the part of cost inflation. On the whole, it is possible to state that the Slovak economy in the years of 1996 and 1997 registered several expressive marks of imbalance, to which the price development reacted with unusually subtle movements.

In the field of monetary policy of 1997, the internal imbalances expressed themselves in the form of pressure they exerted on inflation. From the long-term point of view, the adverse balance of current account of the balance of payments was unsustainable. Growing unfavourable balance of state budget was added to these tendencies. The deficit of state budget expressed itself, besides that, in the form of growing share of net position of governmental sector in the domestic activities, which led to the situation when the entrepreneurial investments and activities were pushed out by the governmental intentions. To circumscribe the aforementioned imbalances, the NBS reacted by restrictive monetary policy, which caused an impressive decline in the growth rate of M2. While in 1966 the growth rate of the monetary aggregate M2 was more than 5 % higher than the GDP growth rate in current prices, in the year of 1997 this growth rate was about 5 % lower. The character of monetary policy of the NBS influenced the inflation and the money price, and that way also the costs of financing the state budget.

The aforementioned potential danger of increasing money price arose already in 1996 and was strengthened in 1997. Surprisingly, it manifested itself in a leap of tension at the wholesale bank market at the end of the second quarter of 1997.

This was caused by several factors, the joined effect of which the NBS probably underestimated. It can be, for example, said of the tax payments to the state budget at the end of the first quarter and of the Easter time which happened to collide with the time of payment

settlements. This swing could be considered a display of long-term tendencies, which is documented by the fact that in spite of certain positive fluctuations it did not fade away until only the end of 1997. The tension from the wholesale bank market led to an important increase in interest rates on deposits and logically gradually transformed itself into the increase in interest rates on credits, including the costs of financing the unfavourable balance of state budget. Subject to the observance of these tendencies, it was possible to expect their following influence on the development of inflation and on the whole economy.

The year of 1998

The development in 1998 proved the persistence of fundamental internal and external imbalances of the economic development of the Slovak Republic. For instance, the costs of financing the deficit of state budget increased and the returns from the emission of state bonds came up to 30 % in May 1998, while deep deficit of foreign trade balance, restrictive monetary policy and high insolvency of enterprises continued. The key event of 1998 was the autumn general election which influenced the economic development and economic policy fundamentally.

The increase of production in 1998 was slowed down regarding GDP and the value added, too. The tendencies in the development of economic results of enterprises were negative as well. The overall industrial production increased, but apart from the production in transportation all the other production of industry was lower. The construction industry, which flourished thanks to the public orders in the previous years, decreased during the whole year. The development in agriculture was negatively influenced by the development of prices, which was characteristic of the decrease in the prices of vegetable products and of the slow-down of the growth of the prices of animal production.

In the year of 1998 macroeconomic imbalance culminated in the Slovak economy. The slow-down of the economic growth in 1998, connected to the imbalance, could be accounted for by influences of all the parts of the demand, firstly of the consumption. Declining growth of the consumption of households, which has a decisive share in the structure of the GDP, influenced the development importantly. Relatively high GDP growth rates of 1996 - 1998 were achieved especially thanks to the fact that a considerable part of gross capital formation and - as a consequence - a great part of GDP was created from the foreign credit resources.

If the import intensity of particular parts of the demand is taken into account, it is clear that in the years of 1997 and 1998 the economic growth was supported by the export to a greater extent than by the domestic demand. As follows, the impressive increase of

investment activities (increase of gross fixed capital formation) contributed also to the increase of competitive ability of the export segment of the economy[11]. In the years of 1997 and 1998 the settling of the domestic products on the domestic market deteriorated considerably.

The increase of price level continued with relatively low rates also under the conditions of deep macroeconomic imbalance. Relatively low inflation rate was possible to be kept only by means of the monetary policy which started to be restrictive[12] and also by postponing the deregulation of regulated prices.

The development of employment in 1997 and 1998 confirmed that the recorded GDP growth did not possess the desired quality during this period.

In relation to the development of foreign trade, the continuing tendency to maintain high deficits of trade balance was characteristic for this period. The share of trade balance deficit on GDP exceeded 10 %.

The deepening imbalance of internal and external economic relations in the Slovak Republic expressed itself markedly in the financial and monetary results of the economic development in 1998. First of all, it proved as a consequence of shortfall of planned incomes of state budget and - in the monetary area - as a consequence of stagnation of the level of monetary aggregate M2 (the reported growth rate was only 2.7 % at the end of the year). Hence, it was impossible to fulfil the declared objective - the decrease of interest rates. Unfavourable development of foreign trade and current account of the balance of payments signalled the necessity of weakening the fixed exchange rate regime of the Slovak crown for some time already.

Only the imminent decrease of foreign exchange reserves during the parliamentary elections compelled the NBS to introduce the floating rate of the Slovak crown, which signified the beginning of the period of depreciation of Slovak currency.

The new governmental coalition, which arose from the parliamentary elections, formed its programme declaration and set objectives of economic policy different from those followed by the previous government. However, the considerable reduction of the economic growth in the fourth quarter of 1998 (the real GDP growth achieved only 0.5 %) brought only

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[11] *However, a considerable part of the investments was centred on the starting of building infrastructure, which could not in the years of 1997 and 1998 influence the competitive ability of the Slovak products on the world markets.*

[12] *The restrictive monetary policy, otherwise favourably affecting the overall price development, led on the other hand to the increase of interest rates and to the increase of cost inflation. At the same time, the high interest rates (under fixed exchange rate regime and through the influence of interest spread) made relatively reliable financing of the deficit of trade balance, by the increase of foreign debt, possible.*

a little optimism for the next year[13] .

The year of 1999

In January 1999 the government approved of the document "Objectives and solutions of macroeconomic imbalance and competitiveness of the Slovak economy". In the first quarter of 1999 the law on state budget was ratified and this ended the period of budgetary provisional measures. The economic development of the first months of 1999 was accompanied by relatively favourable development of inflation and foreign trade balance. These signals were subdued by many unfavourable factors, mainly by negative development of employment, budget revenues and exchange rate of SKK. As a consequence of this, the "Programme of recovery of the Slovak economy"[14] was adopted at the end of May 1999.

The NBS reacted to this programme of governmental measures by approving of the monetary programme which was more concrete in June. In comparison to the previous monetary programme, the NBS expected lower GDP growth and higher inflation. In such a more concrete monetary programme, the increased growth rate of money supply M2 and the net credit to government and the Fund for National Assets were taken into account, contrary to the decrease of growth rate of credits to enterprises and households.

In the year of 1999 the real GDP growth rate of 1.9 % was registered. This represented - under given circumstances - a very favourable value[15] ; however, it meant an impressive year-on-year decrease of GDP growth (comparing to 4.4 % recorded in 1998). On the side of used GDP it was caused mainly by the decrease of capital formation (gross fixed capital formation decreased by 18.2 % during 1999). The private consumption increased by 0.5 %, similar to

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[13] In the last days of 1998 the pay-off of 10 billion SKK increased the state budget deficit, which debited the state balance in the last quarter of 1998. However, the amount of money could bring its positive effect in the field of increased demand no sooner than in the first quarter of 1999. It is very difficult to asses the influence of political changes after parliamentary elections on the behaviour of chosen economic subjects.

[14] It was concentrated on:

- the introduction of temporary import charge,

- the increase of lower rate for value added tax (from the July 1 to December 31, 1999 it was 10 %, then from January 1, 2000 onwards it was 12 %),

- the increase of consumption tax on tobacco products and mineral oils by 2 000 SKK per tonne from the July 1, 1999 onwards,

- the tax from the transportation,

- the price deregulation concerning electric energy, gas, heating, rents, telecommunication services and railway charges.

[15] It was a favourable value mainly in comparison with the fourth quarter of 1999 (the GDP growth rate was only 0.5 % then).

the public consumption (increase by 0.3 %). The foreign trade exerted a powerful positive influence on GDP. In 1999 the export of goods and services in constant prices increased by 7.0 % and import decreased by 2.5 %.

The balance of foreign trade of goods and services in current prices stayed negative in the year of 1999 but more favourable levels were achieved (while it was -80.1 bill. SKK in 1998, it came down to -39.5 bill. SKK in 1999). It manifested itself also in the improvement of the current account of the balance of payments.

The improvement of the balance of payments was brought about by the depreciation of the Slovak crown (October 1998) together with the restraint of the domestic demand and by the newly increased rate of import charge.

The year of 2000

The overall development was influenced by the decision of Helsinki summit of the European Union in December 1999, based on which the negotiations on joining the EU were opened. The government reacted to this invitation by continuing the reforms that emphasized the changes in the institutional environment, the bank system and entrepreneurial sphere restructuring and completing of privatisation. In reference to the measures accomplished in 1999, the recovery of macroeconomic balance went on in 2000. The price development was modified by the increase of state-regulated prices in the second half of 1999 and at the beginning of 2000[16]. The increase of price indices considerably influenced the development of aggregate indicators in the first quarter of 2000. What was positive was also the lower sensitivity of items in the consumption basket. Relatively low level of net inflation was achieved - in relation to the restrained demand and to the increase of competition at the domestic market. The NBS assumption about a small influence of increasing regulated prices on the consumption prices was proven true. Their influence was really subdued by market factors. However, the market was considerably influenced by the policy of NBS. Important change was represented by the high increase of producer prices in comparison with the hitherto development.

The restoration of macroeconomic balance manifested itself in the decrease of real wages and in the increase of unemployment, which was the main source of social and political tensions leading to the referendum on setting up early parliamentary elections. The results of the referendum (which took place in autumn 2000) enabled the government coalition to proceed with started economic policy, concentrated on crucial reforms.

[16] *The courage of the government to apply unpopular decisions needs to be positively assessed.*

The world-wide strengthening of the US dollar and continued increase of oil prices proved to be very significant factors of the external environment. The compensated influence of lower interest rates on the increased oil prices was not discernible, too, because of the distorted competitive environment at our market with oil products. The continuing trade boom in the EU countries and the stabilisation of the Slovak enterprises orientated on exports contributed to the high increase of the export of goods and services, accompanied by the increase of profits of enterprises and its positive effects on the state budget. The increase of export and the decrease of internal demand were positively transformed into the subsequent decrease of the deficit of trade balance. The change of behaviour of enterprises was reflected in such a high increase of unemployment that the government had to react by the support of Publicly Useful Works Programme to mitigate the negative trends in this field (the number of registered unemployed increased year-to-year by 5.7 %).

The development of the internal demand, trade balance and the development in the fiscal area enabled the lowering of interest rates. The decrease of interest rates on credits did not support the inflation impulses since the commercial banks were cautious in the process of extending new credits[17]. The NBS Board began (from February 1, 2000 onwards) to apply such monetary policy which stressed the importance of influencing the interest rates. In the year of 2000, the policy of pulling the interest rates down was practised and the NBS was satisfied with this development.

The real GDP growth was registered at the level of 2.2 % in 2000, which represented a subtle increase in the growth rate. Domestic demand decreased by 1.3 %, the consumption of households by 3.4 % [18], the final consumption of state administration by 0.9 % and the gross fixed capital formation by 0.7 %. On the other hand, the foreign trade had the decisive positive influence on GDP. In 2000, the export of goods and services in constant prices increased by 15.9 %. The economic environment was favourably influenced by the decrease of foreign trade imbalance when the import increased only by 10.2 %, which at the same time exerted the positive effect on the current account of the balance of payments. The export-oriented exchange rate policy can be added to the factors influencing this development, too.

The registered GDP growth rate in 2000 (similar to 1999) was achieved as a consequence of combination of two factors. The first one was the economic policy which acted in favour of revival of economic balance and in favour of reforms (including the proposed increase of regulated prices up to the market-balanced levels). The second factor was represented by the

[17] *The restructuring measures of the government and bankruptcies of some banks contributed to the improvement of the standard environment of banking sector.*

[18] *Consumption of households includes also the final consumption of non-profit institutions serving the households.*

continuation and culmination of favourable market boom in the world economy.

5.2 Health care system development (trend) in 1995 - 2000

By designing the health-sector equations in the previous parts of this work, the analysis of incomes of health insurance companies was concentrated on. The income is impacted on by many factors. Legal regulation of health insurance selection provides the basis for the analysis of incomes. The Act No. 273/1994 of the Code NR SR on health insurance, its financing, formation of General health insurance company (Všeobecná zdravotná poisťovňa), and formation of other department, sector, company and civic health insurance companies is the most important one. Other legal regulations significantly affecting the level of health insurance companies' incomes include the laws on state budget for particular years, where the state-insured clients and the National Institute of Labour insurance amount are stated.

The health insurance companies incomes can be divided into three major groups:

- Employed,
- Unemployed,
- State-insured clients

However, the division is not that simple since a part of the unemployed persons receiving the benefits belongs also to the state-insured clients' group. In the following text, particular groups will be dealt with in detail and different payment method ex-post scenarios (different methods especially for the economically inactive citizens) will be elaborated. The period of analysis includes the data available from the years 1995 - 2000. The income database is created from the annual statistical yearbook data for particular years.

Employed

This group consists of persons for whom neither the state nor the National Institute of Labour repay the insurance, hence they pay it themselves. The *income groups of employed* are such as follows:

- Insurance paid by employees,
- Insurance paid by employers,
- Insurance from self-employed and cooperating persons (SE and CP),
- Insurance paid by others.

Legal changes of the insurance levy ratio were minimal. The insurance paid by employers was stable, it stayed on the level of 10 % of the assess basis during the whole monitored time period. Such employers who employed a citizen with limited working ability paid (for this employee) the insurance of 2.6 % of the assess basis. The levy ratio for employees changed only once - on January 1, 2001 - but it had no impact on the ex-post analysis for years 1995 - 2000. Self-employed persons paid 13.7 % of the assess basis and citizens with limited working ability paid 6.3 %.

Table 5.1: Insurance levy income, in million SKK

Insurance paid by	1995	1996	1997	1998	1999	2000
employees	4 224	6 082	6 773	7 290	7 468	8 135
employers	13 528	16 412	18 693	19 693	20 078	21 906
SE and CP	950	964	1 138	1 308	1 387	1 432
other payers	17	280	218	265	253	283

Source: Statistical yearbook of the Slovak Republic

Table 5.2: Insurance income structure, in %

Insurance from	1995	1996	1997	1998	1999	2000
employees	22.6	25.6	25.3	25.5	25.6	25.6
employers	72.3	69.1	69.7	69.0	68.8	69.0
SE and CP	5.1	4.1	4.2	4.6	4.8	4.5
other payers	0.1	1.2	0.8	0.9	0.9	0.9

Source: Statistical yearbook of the Slovak Republic

As can be seen from the tables 5.1 and 5.2, the income of insurance companies from other payers constitutes only a small amount of income from employees. The ratio is approximately 1 %. Other ratios between the groups stayed almost unchanged during 1995 - 2000, a more significant difference is detectable only between years 1995 and 1996. Nominal value of particular incomes grows annually. This trend can be seen on the Graph 5.1, where the total income of health insurance companies is figured. Growing trend is caused by the growth of nominal salaries.

Graph 5.1: Income of health insurance companies - paid by employees, mill. SKK

Source: Statistical Office of the Slovak Republic

The other aspect of incomes of health insurance companies is the amount of insured persons, or insurance payers, which is figured in the Table 5.3. As can be seen, the amount of paying employees tended to go down or stabilize since 1995, and since 1999 it attained lower figures, which was caused by increasing rate of unemployment. The growth of the number of other payers is also noticeable.

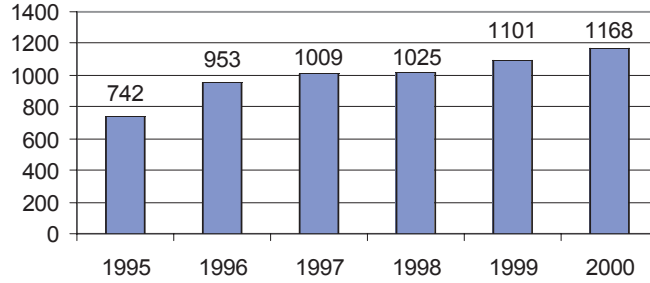
Table 5.3: Number of insured, in thousand persons

	1995	1996	1997	1998	1999	2000
Employees	1 985	1 921	1 931	1 876	1 768	1 819
SE and CP	110	112	247	221	231	241
Other payers	7	43	38	224	211	205

Source: Statistical yearbook of the Slovak Republic

As follows from the tables 5.1 and 5.3, an average health insurance per employee can be defined, designed in the Graph 5.2. The income from insurance per person also proves a similar development as can be detected in total income trend - this figure rises every year. Its grow rate should be identical with the grow rate of average nominal salary.

Graph 5.2: Average monthly health insurance per person, in SKK



Source: Statistical Office of the Slovak Republic

Unemployed

This group contains only the registered unemployed that receive the unemployment benefits. For this group, the National Institute of Labour pays the health insurance. Legal insurance levy ratio for this group changed several times during 1995 - 2000. However, these changes (as will be seen later) were not that dramatic than those concerning the group of state-insured clients. Individual values are figured in the Table 5.4. The insurance rate could be found only since 1996.

As can be seen, the amount of insurance changed minimally during the period 1996 - 2000, only the assess basis increased. During the analysed time period the monthly insurance attained only two values - 336 SKK and 370 SKK. Regarding the average monthly insurance

of employees, a significant distinction can be reported. Neither the growth rates of these two groups were comparable.

Table 5.4: Insurance of unemployed paid by National Institute of Labour

	1996	1997	1998	1999	2000	2001	2002
%	13.7	13.7	13.7	13.7	13.7	14	14
Basis, in SKK	2450	2450	2700	2700	2700	2700	2700
Insurance, in SKK	336	336	370	370	370	378	378

Source: Statistical yearbook of the Slovak Republic

A conclusion can be drawn that the insurance for the unemployed should be paid out of average nominal salary in order to gain approximately equivalent income of health insurance companies (HICs) from potential employees. However, this would have negative impact on National Institute of Labour (NIL) management.

Table 5.5: Number of NIL insured and income of HICs from NIL

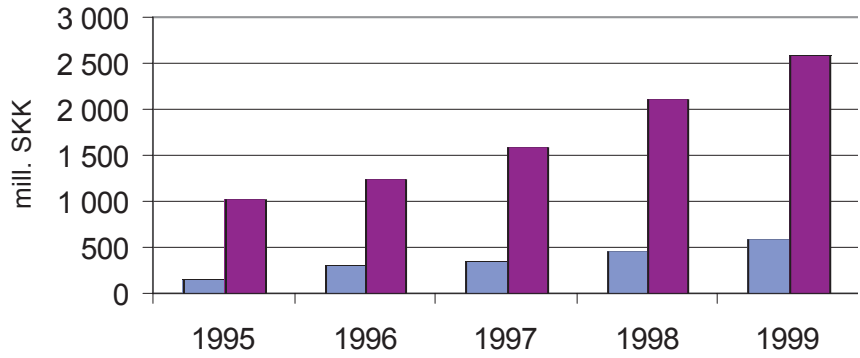
	1995	1996	1997	1998	1999	2000
Number of NIL insured, in thousand persons	87	93	105	128	147	142
Income from NIL, in mill. SKK	143	305	353	464	581	526
Average nominal salary, in SKK	7 195	8 151	9 228	10 009	10 739	11 422
Optimum payment per insured person, in SKK	986	1 117	1 264	1 371	1 471	1 565
Optimum income from NIL, in mill. SKK	1 032	1 246	1 593	2 106	2 595	2 666
Difference between optimum and current income, in mill. SKK	889	941	1 240	1 642	2 014	2 140

Source: Statistical yearbook of the Slovak Republic, own calculations

In the following, the method of reaching the results presented in the Table 5.5 is described. It is clear that the amount of registered unemployed receiving benefits grew every year and it slightly decreased only in 2000. As the insurance was nearly unchanged, this should mean that the income of health insurance companies for this group of people grew proportionally. This was observed to have been true. However, this income grew mainly due to increasing unemployment rate. Thus, the inflation was not considered. This was desired to be eliminated - therefore, the average nominal salary was used as a basis. Its values are listed in the Table 5.5. The average nominal salary grew every year. The row "Optimum payment per insured person" was obtained by multiplying the average nominal salary and the level of levy, which was 13.7 % in this case. For the year of 1995, this ratio was used as well. As can be seen, the insurance per person is significantly higher than actual levy of the National Institute of Labour. Finally, the optimum income from NIL was figured by multiplying the optimum payment per insured person and the amount of insured persons - after this figure is multiplied by number of months, a yearly income of health insurance companies is obtained.

As can be seen from the Table 5.5 and the Graph 5.3, the difference between actual

Graph 5.3: Optimum income from NIL



income of health insurance companies and optimally calculated income is significant and it grows every year. It is due to the fact that the payments of these insured (unemployed) stayed nearly constant during the analysed time period, unlike the average nominal salary which grew every year. If the NIL paid the levies based on average salary, the income of HICs for this group of insured in 1995 would have been even 6 times higher, and in the following years 3 - 4 times higher. It should not be forgotten that such expenses of NIL would have resulted in a higher budget deficit, which could have negatively influenced whole public administration.

Health insurance system incomes from the state

Four groups of policyholders belong here - they are such as listed below:

I. Unprovided-for children

II. Retired persons

III. Unemployed, not receiving unemployment benefits

IV. Persons taking care of a baby and others

The amount of payments from each group is the same, but it was subject to change each year. It can be calculated from three indicators. The first one is the percentage levy - similar to the other groups, the 13.7 % levy is paid here (the percentage is 14 % since 1.1.2001.). Next two figures to calculate the amount of payments from are the percentage and the baseline. Example: In the year of 1995, the state paid 13.7 % out of 54 % of the base 2 450 SKK, which represented 181 SKK. Comparing this figure to 742 SKK paid by each employed person, an obvious imparity is detected. Table 5.6 contains the rest of the data. The amount of budgetary incomes for the years of 2001 and 2002 is presented.

Table 5.6: Income of health insurance system - paid by the state

	1995	1996	1997	1998	1999	2000	2001	2002
Act No.	58/1995	304/1995	386/1996	375/1997	63/1999	372/1999	472/2000	586/2001
% No. 1	13.7	13.7	13.7	13.7	13.7	13.7	14	14
% No. 2	54	80	80	73	76.5	76.5	100	100
Base	2450	2450	2450	2700	2700	2700	2400	2700
Payment	181	269	269	270	283	283	336	378

Source: State budget of the SR

It can be seen that the payments slightly grow but the starting position was very low. More significant growth occurred in the year of 1996 when the payments grew by 88 SKK (almost by 50 %). The payments were kept on nearly unchanged level for next three years. The highest payment is expected and planned for the year of 2002 (378 SKK per person).

As the analyses showed, the state should pay the same percentage as others to the health insurance system. The base for payment calculation should be the same, too. The analyses also confirmed that the base should be set at the level of the minimum wage. The reason is provided by an idea that the state should pay the same amount as the employee with the lowest possible income. The minimum wage was also subject to change during past years. The levels and the dates of these changes in minimum wage are depicted in the Table 5.7.

Table 5.7: Minimum wage

Date	**1.1.1993**	**1.10.1993**	**1.4.1996**	**1.1.1998**	**1.4.1999**	**1.1.2000**	**1.10.2000**	**1.10.2001**
Level in SKK	2 200	2 450	2 700	3 000	3 600	4 000	4 400	4 920

Source: NR SR legislation

It was necessary to re-calculate the minimum wage to obtain a consistent time series. The weighted average was used to calculate this.

Table 5.8 Average minimum wage

Year	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Minimum wage in SKK	2 263	2 450	2 450	2 638	2 700	3 000	3 450	4 100	4 530

Source: own calculations

Next analyses were divided into four parts. In each part, a calculation for each group for which the state pays the insurance is analyzed. The shares of particular groups in total amount of the state payments are presented in the Table 5.9.

Table 5.9: Shares of persons in each group

	1995	1996	1997	1998	1999	2000
Unprovided-for children	53.4 %	54.7 %	55.0 %	50.2 %	49.3 %	49.0 %
Retired	31.4 %	30.4 %	30.3 %	33.0 %	33.7 %	34.1 %
Unemployed not receiving benefits	8.2 %	7.1 %	6.3 %	6.3 %	6.5 %	6.7 %
Others	7.0 %	7.7 %	8.5 %	10.5 %	10.4 %	10.3 %

Source: own calculations

Analyzing the table it can be concluded that the population is getting older. The share of children declines while the share of retired persons still grows. The share of the unemployed is kept nearly at the same level.

Unprovided-for children

The state pays the insurance for those children who have no own income. The results of the analysis are presented in the Table 5.10.

Table 5.10: Incomes from the group of unprovided-for children

	1995	1996	1997	1998	1999	2000
Number	1 696	1 758	1 803	1 571	1 576	1 533
Incomes of health insurance system	3 808	5 648	5 713	5 292	5 454	5 478
Optimum monthly payment (SKK)	336	361	370	411	473	562
Optimum incomes of health ins. system	6 833	7 623	8 003	7 748	8 939	10 333
Difference: optimum vs. actual	3 025	1 975	2 290	2 457	3 485	4 855

Source: Statistical yearbook of the SR, own calculations

It can be seen that if minimum wage was taken as a base for calculations the incomes of health insurance system would have rapidly grown. This would have had a negative impact on the state budget. As the Table 5.10 shows, the most significant differentiation between optimum and actual incomes occurred in 1995 (optimum payment is 80 % higher). This happened because the lowest possible payment was set. In 2000, the difference of almost 5 bill. SKK occurred. During the year of 2000 the growth of minimum wage was high*. It can be seen that the optimum payment grew from 473 SKK to 562 SKK while the actual payment was kept at the same level of 283 SKK.

**** Minimum wage grew to the level of 4100 SKK while it was 3 450 SKK in 1999.***

Retired persons

The state also pays the insurance for the retired to the health insurance system (HIS). A serious problem arises as the number of retired grows - because of unsustainably high state payments.

Table 5.11: Analysis of payments for the retired

	1995	1996	1997	1998	1999	2000
Number of retired in thousand persons	998	978	992	1 033	1 078	1 066
Incomes of health ins. system, in mill. SKK	2 240	3 142	3 143	3 479	3 731	3 809
Optimum payment per person	336	361	370	411	473	562
Optimum incomes of health ins. system, in mill. SKK	4 018	4 241	4 403	5 095	6 114	7 185
Difference: optimal vs. actual	1 779	1 099	1 260	1 615	2 384	3 376

Source: Statistical yearbook of the SR, own calculations

As can be seen from the Table 5.11, the difference between calculated optimum payments and actual payments grew year-to-year. It declined only in the year of 1996. This was caused mainly by demographic reasons.

Registered unemployed not receiving unemployment benefits

Since this group comprises the unemployed, the state should be obliged to pay the same payments for these people as the National Institute of Labour pays for the unemployed. This means that the state should pay 14 % of the average nominal wage. However, this is not so - therefore, higher differentiations between actual and optimum base ex post scenario payments are expected in this case.

Table 5.12: Analysis of payments from the group of the unemployed not receiving unemployment benefits

	1995	1996	1997	1998	1999	2000
Number of the unemployed not receiving benefits (in thousand)	259	228	205	197	208	210
Incomes of the HIS, in mill. SKK	582	732	650	664	720	750
Optimum payment, in SKK	986	1 117	1 264	1 371	1 471	1 565
Optimum income of the HIS, in mill. SKK	3 065	3 055	3 110	3 242	3 672	3 943
Difference: actual vs. optimum payment	2 484	2 323	2 461	2 578	2 953	3 193

Source: Statistical yearbook of the SR, own calculations

The largest number of people in this group was reported in 1995. Since then it decreased and during the last three years remained at nearly the same level. Incomes of the health insurance system increased from 582 mill. SKK in 1995 to 732 mill. SKK in 1996. Subsequently, the incomes fell to 650 mill. SKK and grew during the next three years.

The highest differentiations between actual incomes and base scenario optimum incomes are reported as this group of persons is concerned. If the state paid optimum payments, these would have ensured substantially higher incomes of the health insurance sector. On the other hand, this would have negatively afflicted the state budget.

Persons taking care of a baby and others

Though this group expresses the lowest share in total number of state-insured persons, the number of people belonging here grew during the years 1995 - 2000. In 1995 the number represented only 7 % while it was more than 10 % in 2000. People taking care of a baby, persons in prisons, men in the military service, etc. are included in this group. As can be seen, the number of them grew until 1998 and since then remained almost at the same level.

For this group, a percentage of 13.7 % (14 % respectively) of the minimum wage was

Table 5.13: Analysis of incomes from the group of people taking care of a baby and others

	1995	1996	1997	1998	1999	2000
Number of policyholders, in thousand persons	224	249	278	330	333	321
Incomes of the HIS, in mill. SKK	502	800	881	1 112	1 152	1 147
Optimum payment, in SKK	336	361	370	411	473	562
Optimum income of the HIS, in mill. SKK	901	1 080	1 234	1 628	1 889	2 164
Difference: actual vs. optimum payment	399	280	353	516	736	1 017

Source: Statistical yearbook of the SR, own calculations

chosen. The payments were expected to be similar to the payments with the same system. Again, the highest difference was reported in the year of 2000.

State-insured persons in total

On the basis of previous analyses, the influence of optimum base ex post scenario on state budget was attempted to be calculated. There are approximately 3 million of people for whom the state pays to health insurance system.

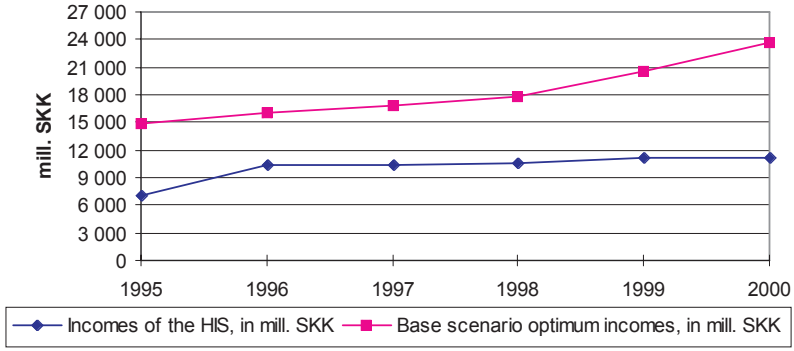
Table 5.14: Policyholders of the state

	1995	1996	1997	1998	1999	2000
Persons in total, in thousand	3 177	3 213	3 278	3 131	3 195	3 130
Incomes of the HIS, in mill. SKK	7 132	10 322	10 387	10 546	11 057	11 184
Growth rate	*	44.7 %	0.6 %	1.5 %	4.8 %	1.1 %
Base scenario optimum payments to the HIS	14 818	15 998	16 751	17 712	20 614	23 625
Growth rate	*	8.0 %	4.7 %	5.7 %	16.4 %	14.6 %
Difference: actual vs. optimum	7 686	5 676	6 364	7 166	9 557	12 441

Source: Statistical yearbook of the SR, own calculations

The optimum payments of the state into the HIS represent the sum of payments for particular groups. Interesting results were found - focusing on the real total income of the HIS, a high growth can be observed only in 1995 (44.7 %). There are 0.6 - 4.8 % growth rates in the following years only. This can be concluded even without taking price development

Graph 5.4: Incomes of the HIS



into consideration, meaning that real incomes of the health insurance system decline each year. On the other hand, the optimum payments did not grow so rapidly in 1995. But in the following years, the growth rates of base scenario incomes of the HIS are higher than those of the real ones.

A conclusion must be drawn that some additional money from the state budget would be needed to increase health insurance incomes (in the year of 2000 the amount of money needed represents 12.4 bill. SKK).

Fixed payments

In this scenario, another type of optimum payments to the health insurance system was calculated. The total optimum income of the HIS - payments from employees, employed, National Institute of Labour, and the state - was counted (Table 5.15). Ratio to each type of persons was calculated. The result obtained was such an amount of money which each citizen of Slovakia should pay to fulfil the base scenario optimum incomes of the HIS.

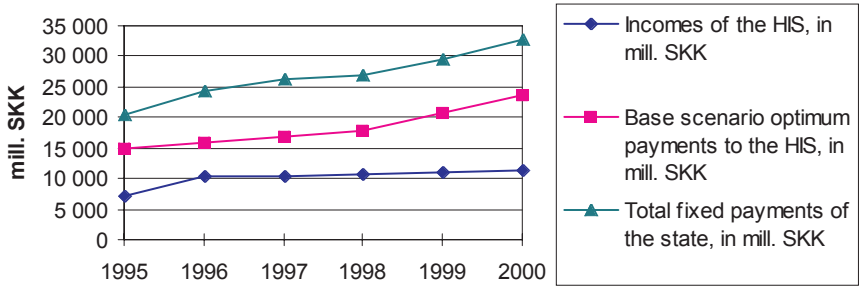
Table 5.15: Fixed payments

	1995	1996	1997	1998	1999	2000
Payments from employment, in mill. SKK	18 719	23 738	26 822	28 556	29 186	31 756
Optimum payments of the NIL, in mill. SKK	1 032	1 246	1 593	2 106	2 595	2 666
Payments of the government, in mill. SKK	14 818	15 998	16 751	17 712	20 614	23 625
Total payments, in mill. SKK	34 569	40 982	45 166	48 375	52 395	58 047
Total number of policyholders, in thousand persons	5 367	5 382	5 638	5 613	5 663	5 546
Fixed payment per person, in SKK	6 441	7 615	8 011	8 618	9 252	10 467
Monthly payment per person, in SKK	537	635	668	718	771	872
Total fixed payments of the state, in mill.SKK	20 463	24 466	26 260	26 984	29 561	32 760

Source: Statistical yearbook of the SR, own calculations

It can be concluded that in order to keep the same level of incomes of the HIS as in the base scenario, the state should pay more money to the health insurance system; and the employed persons and employers should pay less compared to the base scenario. This situation would have a strong impact on the state budget.

Graph 5.5: Development of HIS Incomes



6. Forecast for years 2001 - 2006

Forecast of macroeconomic development of the Slovak health care system is divided into three closely interconnected parts. The first part is devoted to a demographic forecast, the second one to the macroeconomic forecast of the SR, and the third part is aimed at the macroeconomic forecast of the Slovak health care system[17].

6.1 Forecast of demographic trends

To quantify the forecast of demographic trends, a composite method was used. Year 2000 represented a reference point for the calculations carried out. The forecast was calculated for three scenarios - low, middle and high variants. All of them represent possible trends; however, the middle variant is considered the most probable one. The results for particular scenarios proved not to be markedly different due to a relatively short forecasting period (10 years).

Methodology

Forecast of the Statistical office of the SR provides a data basis of 5-year time series (2000, 2005, 2010…) and 5-year age groups (0-4, 5-9, …, 95-99, 100+) for each sex. *A net growth coefficient for particular age group* was quantified.

$$kp_{i,k,l} = P_{i,k-1,l-1} / P_{i,k,l} \qquad (6.1)$$

where

$kp_{i,k,l}$ - *net growth coefficient:*

- *i - sex; i=1, 2 (male, female)*
- *k - age group; k=1, 2, ..., 21 (age group 0-4, ..., age group 100+)*
- *l - period; l= 1, 2, ..., 4 (year2000, ..., year2015)*

$P_{i,k,l-1}$ - *number of persons of particular sex and age group in particular period*

An assumption of total natural growth was accepted, i.e. it was presumed that the number of people belonging to a certain age group in present period is the same as the number of people belonging to the one-level-lower age group in previous period, modified by decease

[17] *The study (82) deals closely with the system of forecasting in SR.*

coefficient. *Decease coefficient* describes the probability that person of age k stays alive till the age k+1. Simplification: In 2015, the same number of women will belong to the age group 20-24 as used to belong to the age group 15-19 five years before (2010). At the same time, the fact that some of the women die during this period has to be considered - hence, the number must be modified by decrease coefficient.

$$P_{i,k+1,l+1} = P_{i,k,l} * kp_{i,k,l=4} \qquad (6.2)$$

where

$P_{i,k,l}$ - *number of population in particular group:*
- *i - sex; i=1, 2 (male, female)*
- *k - age group; k=1, 2, ..., 21 (age group 0-4, ..., age group 100+)*
- *l - period; l= 1, 2, ..., 4 (year2000, ..., year2015)*

$kp_{i,k,l}$ - *growth coefficient for particular group*

To calculate the *number of new-born children* in age group 0-4, the number of women in fertile age (15-49) - women able to have a baby - was needed. The net birth-rate coefficient was calculated.

$$kf_l = \frac{P_{0,l}}{\sum_{k=4}^{10} P_{i=2,k,l}} \qquad (6.3)$$

where

kf_l - *net birth-rate coefficient for period l*

$\sum_{k=4}^{10} P_{i=2,k,l}$ - *number of women in fertile age in period l*

$P_{0,l}$ - *number of new-born children in period l*

This coefficient was used to calculate the number of children in age group 0-4 in the next period. It was modified according to particular scenario being currently quantified.

The number of children in age group 0-4 was calculated by these formulas:

$$P_{i=1,1,l} = \left(\sum_{k=4}^{10} P_{i=2,k,l} * kf_l * ku_{i=1,0,l} * mas_l \right) * 5 \qquad (6.4\ a)$$

where

$P_{i=1,1,l}$ - *number of boys in age group 0-4 in period l*

$\sum_{k=4}^{10} P_{i=2,k,l}$ - *number of women in fertile age in period l*

kf_l - *net birth-rate coefficient in period l*

$ku_{i=1,0,l}$ - *decease coefficient for new-born boys*

mas_l - *coefficient of masculinity (share of new-born boys on the total)*

$$P_{i=2,1,l} = \left(\sum_{k=4}^{10} P_{i=2,k,l} * kf_l * ku_{i=2,0,l} * \left(1 - mas_l\right) \right) * 5 \qquad (6.4\ b)$$

where

$P_{i=2,1,l}$ - *number of girls in age group 0-4 in period l*

$\sum_{k=4}^{10} P_{i=2,k,l}$ - *number of women in fertile age in period l*

kf_l - *net birth-rate coefficient in period l*

$ku_{i=2,0,l}$ - *decrease coefficient for new-born girls*

mas_l - *coefficient of masculinity*

Forecast of the population development in the SR up to the year 2010

Input scenarios

The number and the structure of the population are directly influenced by the development of fertility, mortality and migration. All these demographic processes went through large changes over past ten years. It is very probable that the demographic development in Slovakia will be less dynamic in 2001 - 2010 than it was during the 1990s. With stable trends in mortality and migration, the number and the structure of the population will be determined by the development of fertility.

Fertility

The development of fertility will determine the number and the structure of population up to the year 2010. This aspect of population development creates the greatest uncertainty in population forecasts, due to the fact that it is hard to estimate whether the decrease in fertility will continue, or whether it will stop and when. Based on the development of fertility in the first quarter of 2001, it can be said that the decrease in fertility will continue at least until the end of 2001. The stop of the decrease in fertility after 2002 and its subsequent gradual

increase is considered the most probable variant of the development of fertility. However, a variant of continued decrease in fertility till the end of 2010 (reaching current lowest European values) as well as a variant of higher increase in fertility (in comparison with the middle variant of the forecast) are also probable.

Table 6.1: Estimation of the development of fertility in the SR up to 2010

Variant	Year									
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Low	1.259	1.250	1.242	1.233	1.225	1.216	1.208	1.199	1.191	1.182
Middle	1.259	1.250	1.269	1.278	1.288	1.297	1.307	1.316	1.326	1.335
High	1.259	1.278	1.298	1.318	1.337	1.357	1.376	1.396	1.416	1.435

Mortality

In all three variants of the development of mortality, the continuation of the decrease of mortality (as observed during recent years) was assumed. The variants differ in the rate and the volume of the decrease. Higher decrease of mortality in case of men was also presumed, which should result in gradual lowering of current difference between life expectancies of men and women.

Table 6.2: Life expectancy at birth in the SR up to 2010 - men

Variant	Year									
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Low	69.25	69.36	69.46	69.57	69.68	69.78	69.89	70.00	70.10	70.21
Middle	69.36	69.60	69.84	70.08	70.32	70.57	70.81	71.05	71.29	71.53
High	69.47	69.84	70.22	70.59	70.96	71.34	71.71	72.09	72.46	72.84

Table 6.3: Life expectancy at birth in the SR up to 2010 - women

Variant	Year									
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Low	77.30	77.38	77.46	77.54	77.63	77.71	77.79	77.87	77.96	78.04
Middle	77.39	77.57	77.76	77.94	78.12	78.31	78.49	78.68	78.86	79.05
High	77.47	77.75	78.04	78.32	78.61	78.89	79.18	79.46	79.75	80.03

Migration

Migration does not influence the development of the number of population at a large scale currently; moreover, the statistics on migration are influenced by the evidence of moved people. It is improbable that the development of migration should change dramatically in the following years, even if Slovak Republic enters the European Union. On the one hand, the number of potential emigrants (in connection with working abroad) is limited from both the demand and supply sides. On the other hand, Slovakia currently disposes of no conditions for accepting a large number of immigrants. Therefore, it is highly probable that the migration balance will change only marginally in the following years, and it will gradually increase.

6.2 Macroeconomic forecast for years 2001 - 2006

Foundations and assumptions of future development in outer and inner economic environment of reference type

It is assumed that the reform process will not be as fast as was declared. The election year 2002 creates the main risk of this forecast, since many decisions of state institutions can be motivated more politically than economically. Concluding process of bank privatization creates a space for more effective capital allocation in the future[18] .

It is also presumed that the company consolidation will proceed only slowly, which will negatively affect the whole economy development. The goal of the reforms in legislation is not achieved sufficiently, which makes field for continuous use of ineffective company management. Thanks to the final stage of bank privatization, loans are not to be put into problematic companies in such a high rate as in the past, which supports the chances of more successful companies. In the future, the effects of high investment rate should prevail and support higher competition ability of the companies. High import intensity of both consumption and export is assumed. A combination of pro-export measures will create higher dynamics of both export and import. The main factor of protection against foreign competition will remain small market and low purchasing power.

Conjunctional research (Table 6.4) shows the superiority of optimistic expectations throughout year 2001. However, the results for September suggest lowering of relatively high optimistic expectations. Only the following months will show whether or not it is a trend issue.

Table 6.4: Conjunctional balance[19] - expected development for following 3 months in industrial companies

	Months in 2000						Months in 2001								
INDICATOR	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Economic situation	27	24	26	22	11	20	41	49	36	35	15	15	27	50	37
Overall demand	50	48	48	39	15	40	39	40	26	16	10	3	34	37	25
Domestic demand	27	21	21	14	8	15	19	19	1	19	5	-6	27	29	24
Foreign demand	51	47	41	33	5	26	54	51	33	23	18	7	35	33	21
Volume of production	44	47	40	32	11	50	42	42	19	16	13	-8	30	20	17
Number of employees	-23	-26	-35	-35	-28	-35	-14	-14	-19	-25	-17	-19	-12	-20	-26
Producer prices	31	45	42	49	32	27	55	44	47	45	36	27	29	42	41
Insolvency	3	-14	-44	-18	8	-8	-54	-54	-55	-27	-21	-45	-20	-19	-21

Source: Statistical Office of the SR

[18] Detailed macroeconomic forecasts are published also in (79), (81).

[19] Conjunctional research gives information taken from respondents evaluating the state or the trend of an event to be positive, negative or neutral. The difference between positive and negative values (answers) in per cents of corresponding weights is called conjunctional balance. As weights, volume indicators of production or number of employees are used.

Slower changes in the efficiency of industrial companies will affect the development of employment. The growth of labour productivity is the key parameter of many companies, which also contributes to high unemployment. New working opportunities will absorb the decline of workers in transformed companies only partially. An important factor is also the creation and development of business chains, which contribute to lowering labour intensity and thus lower the employment in retail shops and wholesales. These factors will lead to stagnation of labour demand. A subtle growth of employment will be created by policies aiming at diminishing the place for grey economics and limiting the misuse of social system. It is assumed that the trend of GDP growth accompanied by inadequate growth of employment will persist. The development of unemployment will be a risk from the point of view of social security funds management and the whole fiscal system, too. The short-term reforms for years 2001 and 2002 will cause negative effects. The increase in flexibility of labour market is assumed to be slow. The salaries in public sector will grow more slowly than in private sector. Increasing number of working places is expected only in connection with foreign direct investment apart from privatization and with active employment policy. The growth of the number of economically active citizens will be slower due to the change in duration of elementary school studies (from 8 to 9 years) and also due to the end of huge population boom from early 80s.

In the following years, factors which will not allow for a great decrease in inflation are expected. The reason should be the approximation of domestic price index to the one of the European Union. The deregulation of regulated prices will also increase the inflation. Exchange rate should be neutral to the inflation. In the field of import prices, continuation of the oil price growth is not expected. However, high oil prices will infiltrate into prices of all products and services. The growth of internal demand will be a factor of creation of demand inflation. Year 2002 will be also marked by paying state FNA (Fund for National Assets) obligations at the end of 2001. If high liquidity causes inflation, the National bank is ready to increase interest rates. In case of non-decreasing inflation, lowering of interest rates is not expected. A slight revival compensated by careful policies should not generate any effects of heated economy.

Into the assumptions, the fiscal frames of mid-term financial overview for years 2001 - 2004 and the declaration of Slovak economic policy were tried to be implemented. On the other hand, it was assumed that the real economic development will slow down planned reforms. As the mid-term financial overview declares, the fiscal policy should be the factor of economy stabilisation. Increase of the government budget deficit in 2001 is justified by a rapid rise of payments in public funds which should allow for a balanced budget. This

assumption represents a big risk for the public budget in 2001, due to the government having just a little power over many parts of the public budget. The realisation of infrastructural projects will consume a lot of money from public budget in the following years. The unfavourable conditions in the pension fund and the health care fund press on higher public finance deficit. According to the government declarations, 2001 will have a higher deficit and in the following years the deficit will remain on relatively the same level. The public debt will increase. The necessity to finance the public debt will result into non-lowering interest rates. The risk for the development of the public finances will be the necessity to cover new obligations, for example those connected to the association processes and the reform of public government. Lower rate of changes resulting from the reasons of social acceptance is expected. A strict regulation of state guarantees supply will limit the loans supply. To hold this line, the fact that state guarantee supply is a financial criterion in the SMP monitoring programme will help.

It is expected that the total balance of payments will be slightly positive. Lower pressure towards lowering the Slovak crown exchange rate is expected[20]. The National bank will react to the negative effects of expected preference of consumption due to increased income from FNA obligations. The EU integration process should help to widen business contacts with foreign countries where foreign income of employees should increase.

A fluctuating deficit of the current account and its covering by foreign direct investment, together with a positive development of other parts of capital and financial accounts, will create conditions for a stable development of the exchange rate. The support of export and deadening of import require keeping the trend of slight weakening of the exchange rate. In the forecast, a subtle nominal depreciation of Slovak crown is expected. This should result in exchange rates levels of 55 SKK/EUR and 60 SKK/USD in 2006. The trade balance will be affected by lowering import charge (down to 0 %) starting in January 2001 and lowering of other import barriers.

The monetary policy will probably continue in the course of development from recent years - therefore, conservative monetary policy with high attention to inflation development[21] is expected. The competition in the commercial bank segment, mainly in the field of credit policy towards big Slovak and foreign companies, is very high. Thus, the companies will

[20] *For this purpose, a special account for FNA will be created in NBS to deposit finances from privatization. This will constitute the prevention from destabilization of inter-bank money and foreign currencies market resulting from expectations of irregular income of large amount of foreign currencies. The NBS will convert these finances and gradually put them into the economy as was declared by the Slovak government. The goal is to prevent creation of shocks to commercial banks liquidity.*

[21] *An indicator describing the characteristics of monetary policy is considered the difference between growth rates of M2 and nominal GDP.*

push toward lowering interest margins. An important factor is a change of allocation of loans. Since the banks limit their credits to problematic companies, an opportunity of bigger external financial resources emerges for the competitive companies.

In the field of public finances, a positive sign appears in the form of lowering income taxes for both juridical and natural persons. The change of competencies from state government to the local governments is very slow and it can be assumed that the process will not have a negative effect on economic situation, except for starting investment costs and possibilities of local governments to manage their deficits. It is also assumed that the political development after parliamentary elections in 2002 will not dramatically change the reform direction; however, prior to the elections the reform process will be slower. Positive effects from Slovak OECD membership and the effort to enter the EU and NATO are expected.

There is only little information about particular conditions of Slovak accession to the EU in 2004 - 2006, namely information about possible macroeconomic effects of transitory measures and entering the EU[22] . Therefore, this alternative is not implemented in the forecast.

The key factor of development in the outer economy is lower prosperity in all economic zones. The overview of the development of world economics is complicated after worsening of the international political situation following the terrorist attacks on the USA in September 2001. The lower dynamics of American aggregate demand is regarded in various ways. In the forecast, assumptions similar to those expecting positive results of American administration acts in the form of lower taxes and interest rates are incorporated. Pro-growth factors can help to improve American economic performance probably even before the end of 2002.

The new forecast of the Organization for economic cooperation and development (OECD) expects only 1.2 % economic growth (instead of previously expected 2.8 %) in its 30 member countries. Positive trends in the demand rise should be supported by lower oil prices, lower inflation and lower tax rates. The WTO report says that the development of the volume of world trade will, following the 12 % rise in 2000, decrease to 2 % in 2001. The result of a 30 % decrease in the volume of semiconductor trade, in comparison to 2000, showed also in Slovakia where the decrease in this segment is located.

It is assumed that there will be a change in the development on main world exchanges after a long period of decrease. It will be also a result of investor reaction to lower interest rates. More positive investor views will contribute to economic growth. Continuous process of lowering interest rates will decrease costs on new investments and management of companies with a positive effect on profitability.

[22] *Higher income from foreign direct investments, acceptation of Slovak products as domestic products at the EU markets, and - on the other hand - higher rating of the SR, etc.*

[23] *The foreign trade with the EU countries represents more than 50 % of total foreign trade.*

The future development of Slovak export will be determined mainly by the development in the European Union[23] and the Czech Republic. The German government decreased its forecast of the economic growth for 2001 from previous values of 2 % down to 0.75 %. For the following year, German economic growth is expected at a level of 1.25 %, while the original government forecast was 2.25 % GDP growth. In 2001 and 2002, the inflation in Germany is to be 2 %. The German government assumes that current economic decrease should reach its bottom in the winter of 2001/2002.

The Czech economy is in the phase of accelerating vitalization with low inflation. In the field of foreign direct investments, a trend of high growth is to continue. Such a combination of positive factors is to lead to 3 - 4 % GDP growth (Table 6.5). Being a very open economy represents the main risk for Czech economy. In connection to current negative expectations, lower future dynamics of the economy is more probable compared to original forecasts.

After two years of decreasing foreign trade disequilibrium of the Slovak economy, factors lowering both import and export increases will prevail. It is assumed that in 2002 - 2005 the volume of world trade will rise by 3.5 - 4.5 %, which is lower than in 2000. An increase of world prices of export and import, resulting mainly from prices of food and raw materials, is also assumed. It is probable that the EUR will not reach the parity with USD at the horizon of this forecast.

As follows, worsening prosperity of Slovak main trading partners in 2002 and its subsequent increase in the following years is assumed. Foreign trade development of Slovakia will not be determined only by foreign demand but also by competitiveness of Slovak producers and exporters.

Table 6.5: Forecast of selected Czech macroeconomic indicators

		2001	2002	2003	2004
GDP, constant prices 1995	previous year = 100	103.6	103.8	103.8	104
Domestic demand, constant prices 1995	previous year = 100	104.6	103.6	103.1	103.2
Inflation rate	average growth in %	5.1	4.6	4.1	-
Unemployment rate	average in %	8	7.7	7.6	7.5

Source: Forecast of the development of main macroeconomic indicators of the Czech Republic, Ministry of Finance of the Czech Republic

Forecast for years 2001 - 2006

In the following part, the forecast of the development of main macroeconomic indicators is described up to the year of 2006. The forecast was constructed using simulated application of econometric model ISWE01q4. From the point of view of the necessities, goals and

priorities of this study, the attention is mainly paid to the development of real economy, the development of balance of payments, and the incomes and payments of the state and public budget. Complete results of the macroeconomic forecast are to be found in the tables contained in Annex I.

Inflation

Consumer prices

Measures taken by the government to reform the economy (which began in the second half of 1999) started the growth of average yearly inflation - it reached 10.6 % in 1999 and 12 % in 2000. This growth was mainly caused by increasing regulated prices[24] , by re-introduction of import charge, by change of several tax rates, and by depreciating exchange rate. These measures were, however, necessary to be taken after the period of keeping inflation low artificially in years 1996 - 1998.

Due to current inflation development, the inflation rate for 2001 is forecasted to be 7.6 %, while the core inflation is to be 4.7 %.

The inflation development till 2006 will be marked by continuation of started trends. The main anti-inflationary factor will be the monetary policy. Other factor will also be the rising import prices. The rise will be caused mainly by the prices of food and raw materials. However, this growth is not assumed to be as rapid as the one of oil prices in 2000. Next factor influencing the value of price index will be the growth of nominal wages. Such radical acts as the government did in the second half of 1999 and at the beginning of 2000 are not expected. Slight deregulations, changes in taxes and other charges are expected; however, their effects on inflation are not assumed to be as rapid as in the years of 1999 and 2000. The growth of prices is also expected in connection with the necessity of Slovak price level to approximate to the one of the EU. Due to the aforementioned facts, the inflation for the following time period (2002 - 2006) is forecasted to be between 6.7 % and 6.2 %, and its decreasing trend is assumed. The core inflation will be over 3.5 % at the end of the forecast period.

Producer price index

The main factor affecting the model estimation of producer price index is the prices of inputs to industrial production. Due to the fact that Slovak economy is very open and due to the unavailability of primary materials for domestic production, the material input prices are described by the prices of import. The price of labour is described by the amount of nominal wage in industry.

[24] *The regulated prices need to be increased in order to create an adequate price proportion. Due to the fact that this process was stopped for several years, current increases are quite dramatic.*

In the field of import prices, a slight increase is expected for the following year, mainly concerning food and raw materials. The growth of nominal wage in the whole economy, and in industry as well, will cause higher costs of industry companies, which will affect their prices. The growth rate of producer price index in 2001 should reach 7.7 %. For years 2002 - 2006, it is expected to be between 7.4 % and 5.1 %, with decreasing trend. In the development of producer price index, a rapid rise of dollar in case of oil prices is not expected.

Labour market and wages

Nominal and real monthly wages

According to carried-out analyses, two main and counter-acting factors affect the development of nominal wage. The growth of consumer prices makes the employees force the increase of wages. On the other hand, the growth of unemployment makes it possible for the employers to lower the wages. Time is also an important factor; in the fourth quarter of the year extra salaries are paid which cause nominal wage growth.

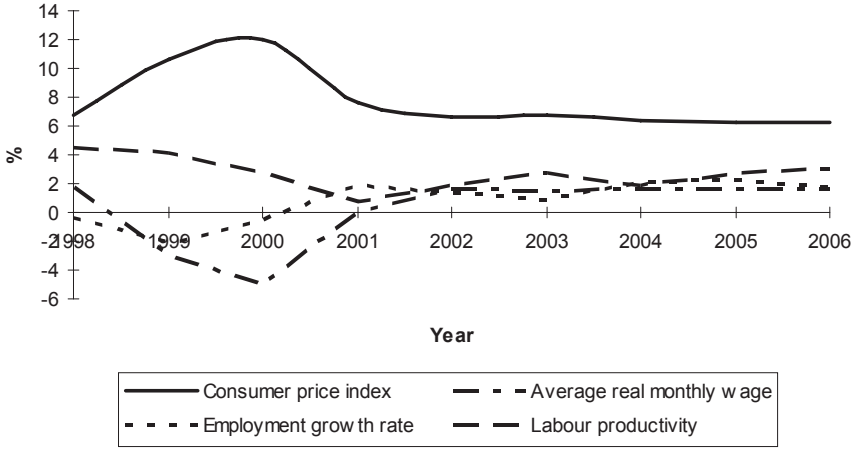
The growth of nominal wage before 1998 which did not take into account the labour productivity caused growth of domestic demand which was supplied mainly by imports. Due to the structure of Slovak industry, this resulted into foreign trade disequilibrium.

Measures taken by the government to reform the economy, which began in 1999, contributed to the decrease in nominal wage growth (from 8.5 % in 1998 to 7.3 % in 1999 and 6.4 % in 2000). This slow nominal wage growth, together with high inflation, caused the real wages decreased by 5 % in 2000.

In 2001, a gradual fade-out of restrictive measures and increased dynamics of wage development are expected. This assumption arises from social situation of the citizens and from social pressure towards wage growth. The election cycle is also taken into account. Due to the development of labour productivity, it is assumed that the companies will prefer wage growth to employment growth. Under these assumptions, the growth of nominal wage in 2001 is forecasted to be 7.6 %, meaning the nominal wage should reach the level of 12 290 SKK. With 7.6 % inflation, this will bring about the stagnation of real wage development.

During the next period (2002 - 2006), a gradual growth of real wages is expected, due to the fact that the nominal wage will copy the price growth more than proportionally. Resulting from this assumption, such a development of nominal wage is forecasted that will support gradual growth of real wage of approximately 1.5 %. Real wage - in constant prices of 1995 - will reach 8 581 SKK in 2006.

Graph 6.1: Development of inflation, average monthly wage and labour productivity



The number of employees in the economy

The employment development represents a big problem currently. Economy does not create the necessary conditions for its solving. The labour demand is, according to the model equation, explained by nominal wage (with negative sign) and by loans to companies. Export is also an important factor which supports industrial production as well as employment. Employment development is also a very inert process. The main impulses from the economy seem to be the situation in company sphere, support of small and medium size companies, and monetary and fiscal policies.

A limited consolidation of companies, starting retail chains, privatization of banking sector and telecommunications, and restructuralization of railways and other state monopolies, lead to labour demand stagnation. The development of institutional policies is insufficient for substantial rise of employment (for example, little effects of small and medium size company support). The economy as a whole has no sign of substantial increase in labour demand. Labour demand can be created only in consolidated companies with clear ownership relationships. There, also the possibility of foreign direct investment and production development exists, leading to creation of labour demand from the side of newly built producing capacities. Another place for labour demand creation can be provided by public sphere reform and by creation of new institutions. However, these places are not considered to be very effective.

Resulting from the aforementioned facts, such a labour demand that would significantly decrease the unemployment rate is not expected. The new working places, which will be

created, will not be able to absorb fully the expected decrease of working places and increase in the number of economically active citizens. The number of workers in the economy, according to statistical surveys, will in 2001 reach the level only a little higher than that of 2000 (2 013 thousand workers, 1.8 % increase). Employment according to sample surveys will amount to 2 125 thousand workers.

For the next period of years (2002 - 2006), a gradual domination of positive effects on employment is expected. Therefore, starting from 2002, a gradual positive growth rate of labour demand is expected. In 2003, a slightly lower growth rate is expected, since after the elections (autumn 2002) employment will be lowered in companies which were not reformed yet. In 2006, the number of employed persons according to statistical surveys should reach the level of 2 186 thousand and according to sample surveys it should amount to 2 307 thousand people. From such a forecast it can be seen that the same employment will be reached in 2002 as was recorded in 1998.

Unemployment rate

This indicator was calculated as a ratio of the number of unemployed persons (difference between the number of economically active citizens and the number of workers in the economy) and the number of economically active citizens[25] lagged by one period[26] .

In 2001, according to the forecast, the average unemployment rate according to sample surveys will reach 19.0 %[27] . The development of the labour demand as expected for 2002 - 2005 suggests the continuation of positive effects on employment. The unemployment rate according to sample surveys will be at the level of 18.5 % in 2002 and by the end of the forecast it will decrease to 17 %. A gradual convergence of the data produced by sample and statistical surveys is also expected.

Labour productivity

The labour productivity is defined as a ratio of GDP in constant prices and the number of workers in the economy[28] . Due to the GDP growth rate being higher than that of the number of workers in the economy, the labour productivity increased by 4 - 6 % yearly, starting from 1995. In 1999 the growth rate was 4.2 % and in 2000 it was only 2.8 %. For year 2001 the

[25] *The number of economically active citizens was taken from demographic projections elaborated by the Statistical Office of the SR in 1996. The effect of prolonged elementary education, which will in short term slow down the increase of the number of economically active citizens, was also taken into account.*

[26] *This is the way unemployment rate is calculated according to sample surveys. The unemployment rate calculated using disposable economically active citizens was derived from the unemployment rate of sample surveys.*

[27] *A question is arises as to the usage of public works.*

[28] *It is obvious that labour productivity deserves deeper theoretical and structural analysis.*

continuation of this decrease is expected. Affected by the employment development, the labour productivity in constant prices will rise only by 1.8 % in 2001 - to the level of 340.2 thousand SKK per worker. GDP growth (3 to 4 %), which will be achieved in following years, in connection with low employment dynamics (around 2 %), will lead to gradual labour productivity growth at the level of approximately 1.8 - 3.0 %.

Monetary development

Characteristics of monetary policy in 2001

According to the monetary programme of the National bank for 2001, one of the main indicators is the yearly growth rate of M2 in current exchange rate - 15.9 % (or 15.5 % as of later-specified monetary programme). The National bank can be said to achieve this goal as the yearly growth rate for the first half of 2001 was reported at the level of 13.8 %. In 2001, the growth rate of GDP in current prices of 10.7 % is expected. From this point of view, the monetary policy is expansive.

Other characteristics of monetary policy include the point of view of loans to companies and households. In the monetary programme for the year of 2001, the National bank does not describe its goals in this field. In the later-specified monetary programme, the NBS declares an indicative value of loans to companies and households to grow by 5.8 %. According to the forecast, there will be a 20 % growth (abstracting from one-shot effect of restructuralisation of some banks the growth would only amount to 6 %)[29] . Due to expected inflation and growth of nominal GDP, the monetary policy will have a restrictive character. This will be caused by the loans to general government. It is estimated that net domestic assets - which are determined by the sum of net loans to general government, companies and households - will increase by approximately 18 %, which means (compared to expected GDP growth of 11 %) an expansive monetary policy. Thus, this will be rather the continuation of the push-out of private loans by government loans (even though at lower rate than in previous years) than a restrictive monetary policy.

In the field of goals in interest rates development, the NBS monetary programme is not specific. According to carried-out estimations, in 2001 a continuation of decrease in nominal interest rates will take place, which - under the conditions of low inflation - will be accompanied by real interest rates increase. In the monetary programme, lowering obligatory minimal reserves is declared, which is a sign of expansive monetary policy.

These partially counter-acting definitions of characteristics of monetary policy can have several explanations. A limited functioning of transmission mechanism can result in market

[29] *In Annex 6.2 (Table 8), the official monetary data of the NBS can be found, which are greatly influenced by re-accounting of classified assets of restructuralized commercial banks into assets of general government. The data abstracting from this one-shot action will be commented on.*

reacting to either nominal or real interest rates. A rapid decrease of interest rates in years 1999 and 2000 does not have any effect on the development of credit emission and accelerating of monetary development. This is also caused by the development of monetary assets structure, mainly growth of net foreign assets and loan to general government[30] .

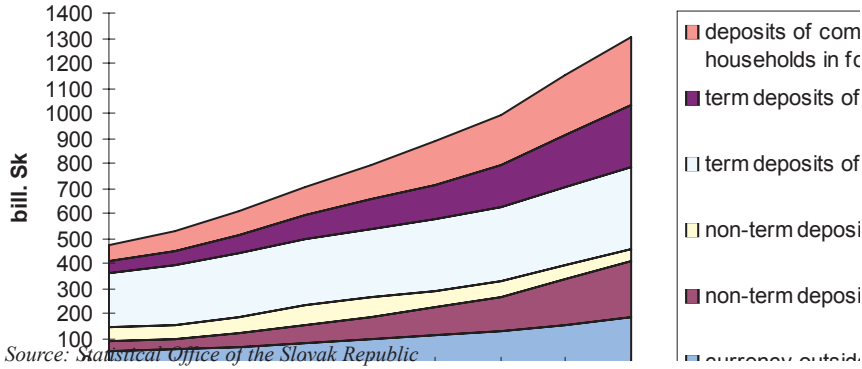
Even though there are many characteristics of monetary policy, the monetary policy of the National bank will be considered expansive in 2001.

Forecast of monetary development

The figures of monetary development in the past as well as their forecast are to be found in Annex I, Table 8. From the development of several parts of money aggregates, the development of money M1 (Graph 6.2) is important, which after the decrease of 11 % in 1998 made an increase by 5 % in 1999 and 22 % in 2000.

As a result of the necessity of adequate volume of money to satisfy the transaction needs, the growth rate of M1 in 2001 is expected to reach 25 % (the corresponding volume is 235 bill. SKK). In the following years (2002 - 2005), as a result of the probable development of interest rates on term deposits and the growing necessity to carry out financial transactions (in connection with growth of nominal wages and outputs), the volume of M1 is projected to grow by 10 - 21 %.

Graph 6.2: The development of liquid liabilities of monetary overview



Source: Statistical Office of the Slovak Republic

In the development of *currency outside of banks M0*, as a sub-aggregate of M1, the influence of interest rates on term deposits is not expected. In 1999 there was a rapid increase in currency outside of banks (by 16 %), which was caused by the Y2K effect (in November 1999 only 4 % increase was reported, while in 2000 M0 rose by 17 %). For 2001, the growth

[30] *There are also the changes in the structure of loans to households and companies. The share of loans to households increases. In connection to restructuralization of credit portfolio of commercial banks a big part of classified assets was moved to "Slovenská konsolidačná, a.s.", and some banks ended their actions.*

rate is predicted to reach 19 % (80 bill. SKK). This will be caused by the necessity to satisfy transaction needs and by expected monetary expansion. In the following years this increase will be between 17 and 19 %.

Non-term deposits of households[31] , as a part of money, mainly as a result of lowering attractiveness of interest rates on term deposits, showed stagnation in 1997, decrease in 1998, slight decrease in 1999 and a rapid rise by 33 % in 2000. For year 2001, mainly as a result of continuous decrease of interest rates, a corresponding increase of the non-term deposits volume (by 32 %) is expected, to reach the level of 71 bill. SKK. For the remaining part of the forecast period, the yearly growth rate of 23 - 34 % is projected. This development will be a result of wage development together with an impact of term deposits, as well as deposits in other currencies.

Non-term deposits of companies and insurance companies show similar trends[32] , but with different timing. After a drop in years 1997 and 1998, in 1999 a stagnation was reported and in 2000 there was a rapid rise (by 18 %). In 2001 the non-term deposits are projected to rise by 26 % to reach 84 bill. SKK. The growth of nominal aggregate demand will increase the volume of transactions which will result in the rise of non-term deposits of companies and insurance companies. In the following period, stagnation or even a gradual decrease of the volume is expected. It will be caused by moving a part of these deposits to deposits in other currencies (mainly USD) and partially to term-deposits.

In 1998, *quasi money QM* reported a high growth rate of 13 %, similar to the one in 1999 (15 %), mainly as a result of continuation of high interest rates. As a result of the decrease of interest rates and of income in 2000, the volume of quasi money should have decreased. However, this was not the case. In 2000, there was an increase of quasi money by 13 %. It was caused by the development of the parts of aggregate QM, mainly term deposits of companies and insurance companies and deposits in other currencies. In 2001, the increase of quasi money by 12 % (to 470 bill. SKK) is forecasted. As a result of the growth of nominal disposable income of households and companies as well as expansive monetary policy in the following years, the yearly growth rate of quasi money is expected at the level of 12 and 13 %.

The volume of *term deposits of households*[33] will have a rising trend, but with lower growth rates than in recent years. It is a result of the decrease of employment and real wages

[31] *Only crown non-term deposits of households are taken into account. Non-term deposits of households in foreign currencies are included in quasi money.*

[32] *The non-term deposits of companies are only those in Slovak crowns, those in foreign currencies are included in quasi money, similar to the situation in households.*

[33] *More accurately - term crown deposits of households.*

in 1999 and 2000. After a rapid rise of the volume of term deposits of households in 1998 (by 13 %), in 2000 the increase was only 5 %. It is closely related to the decrease of interest rates on term deposits. In 2001, mainly as a result of real wage increase but together with interest rates decrease, the term deposits will rise by 4 % to reach the level of 261 bill. SKK. In 2002 - 2005, they will rise by 3 - 6 % yearly. This will be caused by increasing gross disposable income of households (Annex I, Table 5), by increasing employment, nominal and real wages (Annex I, Table 6). The growth of marginal propensity to consume will act against the growth of marginal propensity to save (Annex I, Table 5).

The volume of *term deposits of companies and insurance companies*[34] decreased as a result of devaluation expectations in 1998 and, on the other hand, increased rapidly in 1999 and 2000. It was a result of exchange rate stabilization and economic situation in the company sphere. In 2001, the increase will continue, but at a slower rate (22 %, 93 bill. SKK). In the next period, the volume will yearly increase by 21 - 23 %.

Deposits of households in foreign currencies, in connection with devaluation expectations in 1998, increased by 50 %, in 1999 they stagnated and in 2000 rose by 10 %. In 2001, they will rise by 12 % to reach the amount of 64 bill. SKK. In the next period, their yearly increase is expected to lower down to 11 - 14 %. It will be a result of the trust in the national currency (no devaluation expectations similar to 1998) but also of the increase in incomes and larger contacts with foreign countries.

The *deposits of companies in foreign currencies* also reacted to the devaluation expectations. In 1998, as a result of forced change of exchange rate regime, they rose rapidly (by 155 %), in 1999 they increased by 28 %, in 2000 - mainly due to high effectiveness of dollar deposits - they rose by 55 %. For 2001, as a result of stable development of the exchange rate and larger openness of Slovak economy, the increase will amount to 40 % to reach the level of 53 bill. SKK. In the following period, the continuation of this trend with yearly growth rates of 20 - 32 % is expected.

As follows from the aforementioned facts, in 1998 the companies took the devaluation expectations into account more than the households did; the same was true for the high effectiveness of dollar deposits in 2000. After exchange rate stabilized in 2000, linear increase of deposits in foreign currencies can be expected.

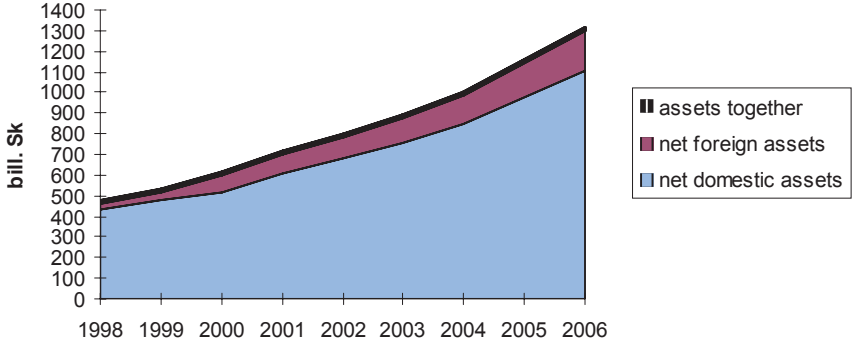
From the forecast of the parts of liquid liabilities in current exchange rate, the forecast of *monetary aggregate M2* in current exchange rate for year 2001 results - the volume of 705 bill. SKK and yearly growth rate of 16 %. As the growth of nominal GDP is expected to be 11 %, it can be concluded that the monetary policy is expansive. For years 2002 - 2005, in

[34] *More accurately - term crown deposits of companies and insurance companies.*

connection with slightly expansive or expansive monetary policy, increases of M2 are projected to be between 12 and 16 %. As the increase of nominal GDP is to be approximately 10 - 11 %, this will be subject to relative lowering of fiscal expansion.

On the *assets side of monetary table* net foreign assets will be a growing part of assets of monetary table in current exchange rate (Graph 6.3) - as a result of exchange rate regime change, relatively positive development of the parts of balance of payments, and gradual stabilization of public finances, under the conditions of expansive monetary policy.

Graph 6.3: Development of assets of monetary table



Source: Statistical Office of the Slovak Republic

In the year of 1998, the *net foreign assets* decreased to a half of its volume, mainly as a result of unfavourable development of balance of payments. As a consequence of better development of parts of balance of payments in 1999, the net foreign assets rose, and in 2000 they rose rapidly (by 83 %). In 2001 the net foreign assets are projected to rise by 2.8 % to reach the amount of 96 bill. SKK. In the following period the yearly growth rate of net foreign assets will reach 12 - 19 %.

The development of *net domestic assets* reflected the development of net foreign assets in the structure of monetary table. In 2001, the increase of 18 % (to reach 609 bill. SKK) is forecasted. This will be caused by expansive monetary policy and subtle increase in net foreign assets. In 2002 - 2005, as a result of slightly expansive or expansive monetary policy, this increase is forecasted to be 12 - 15 %.

To a great extent, the growth of net domestic assets will be absorbed by the development of net government position, which will be in close connection mainly with the development of public budget deficit. It will result in continuous increase of net loan to the government and FNA. In Annex I, Table 8, the official data from the monetary table of the NBS can be found which are greatly influenced mainly by re-accounting of classified assets of

commercial banks into the assets of the general government. These data will be commented on, abstracting from this one-shot impact.

The *net loan to the general government* and to the Fund for National Assets increased rapidly in 1998 (almost by 50 %); in 1999 the increase slowed down, but in 2000 it increased again. In 2001, resulting from the government management, its increase by 21 % to reach 244 bill. SKK is expected[35].

In the following years, assuming the gradual relative lowering of fiscal deficit, the growth rate of net loan to the general government will decrease from 11 % in 2002 to 8 % in 2005.

The development of the *loans to companies and households* during the following years will have a lower dynamics than assets as a whole. In 1998 and 1999, the loans to companies and households slightly increased, in 2000 they stagnated. For the year of 2001, the volume of the loans is predicted to reach the level of 434 bill. SKK with yearly growth rate of 6 %[36]. In the years of 2002 - 2005, resulting from lowering relative deficit management of the general government and from slightly expansive or expansive monetary policy, the growth rate will attain the values of 10 - 13 %.

From many *interest rates* the attention is paid to the interest rates on term deposits, which have an effect on household and company behaviour. In the Table 10 of the Appendix a forecast of development of the main types of term deposits interest rates can be found. The biggest volume is the one of household deposits (they amount to almost a half of M2). In years 1998 and 1999, the average interest rates on household term deposits were over 12 %; in 2000 they decreased to 8 %, leading - together with high inflation rate - to negative real interest rates. For the year of 2001, mainly as a result of expansive character of both monetary and fiscal policies and lower inflation, a slight decrease (down to 7 %) is predicted. For the following period, as a result of expansive fiscal policy accompanied by slightly expansive or expansive monetary policy, its stagnation at the level of 6 - 7 % is forecasted.

Other term deposits interest rates will follow a similar development, only the timing will be a little different. Interest rates on loans will correlate with the term deposits interest rates, but the interest rate margin will be smaller.

The field of *real interest rates* is more interesting. While in 1998 the average interest rate on deposits was 3.5 %, in 1999 - thanks to high inflation - it was zero. The year of 2000 was marked by a decrease of nominal interest rates accompanied by high inflation, which led to negative interest rates on deposits (-5 %). In the following years, as a result of a subtle increase in nominal interest rates and lowering inflation, the real interest rates will increase

[35] *According to the monetary programme of the NBS, it will increase to 348 bill. SKK.*

[36] *According to the monetary programme of the NBS, it will increase to 329 bill. SKK.*

from negative values to slightly positive figures.

In 2000, when the inflation reached 12 %, the disposable income of households increased only by 8 %, which brought about the decrease of real incomes of households. Together with the decrease of real interest rates on term deposits (-4 %) and with the tendency to continue the previous real consumption, this should lead to decreasing volume of term deposits. However, in 2000 the term deposits of households increased by 5 %. This was caused by high propensity of Slovak households to save or by insufficient understanding of inflation[37].

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It is assumed that in the year of 2001 the monetary policy will have an expansive character with M2 money growth rate of 16 % and nominal GDP growth rate of 11 %. On the side of liabilities of the monetary table in current exchange rate, the share of quasi money QM in M2 will decrease; therefore the share of M1 money in M2 will increase. On the side of assets, the net foreign assets will stagnate and the net loan to general government and the FNA will increase, which will lead to decreasing or stagnating real volume of loans to companies and households. This will also be evident in corresponding parts of national economy, mainly in the investment process. In 2001, the growth rate of gross fixed capital formation is expected to be 12.3 % - a result of higher public investment and stabilization of financial situation in several companies.

State budget

The forecast of the development of incomes and expenditures of the state budget can be found in Annex I, Table 10. In the law on state budget for 2001[38], the total incomes of 180.6 bill. SKK and the expenditures of 217.8 bill. SKK were declared, creating a deficit of 37.2 bill. SKK. Since the amount of *fiscal deficit* of the central government[39] is shown by the law (and a change of this law is not expected), the mentioned deficit was considered one of the starting points of the elaborated forecast. For year 2002, the deficit of state budget as declared in the current draft law on state budget for 2002 was taken into account. For the years of 2002 - 2005, measures aimed at lowering the relative state budget deficit were considered, as declared in the current mid-term financial outlook.

Following the years of 1999 and 2000, which from the point of view of fiscal policy can be considered the years of stabilization, the development in future years will be influenced by

37. Term deposits in banks represent the most important form of savings realization. An increasing importance of other forms of savings (like share funds, pension funds, etc.) can be expected. However, the changes in the structure of savings of households were neglected.

38. Act No. 472/2000 of Code NR SR from December 13, 2000, on the state budget for 2001, part 192, pp. 5074 - 5094.

39. It represents the difference between incomes and expenditures of the state budget, neglecting the expenditures to pay loans and obligations.

successfulness of already started reforms and prepared changes in the fiscal field. The character of these reforms should be directed on stabilization of incomes and expenditures of the state budget, which should finally lead to higher expenditure of households and companies [40]. The reaction of the environment will depend on the discipline of the public administration.

The share of fiscal deficit on GDP in current prices describes the management of the state more accurately. In years 1997 - 2000, this ratio attained values of 2 - 3 %. In 2001, mainly as a result of more correct payments of the state into public funds, this ratio will rise to almost 4 %. At the horizon of the forecast its relative decrease to 2.6 % of nominal GDP is expected.

The *total incomes of the state budget* in 2001 are predicted to be at the level of 206 bill. SKK. The total tax incomes are to be 174 bill. SKK, which represents the level of 2000. This is brought about by the development of several types of taxes, mainly by returning the overpayments of income taxes back to those juridical persons who paid them.

After a period which was not favourable for the development of state budget incomes, the year of 2002 is expected to start a more positive period. This development will be also limited by successfulness of economic measures taken by the government and by inflation effect on indirect taxes. For years 2002 - 2005, increase in tax incomes by 8 - 16 % is forecasted.

For the forecast period, the *incomes from the income tax of natural persons* prove a very unusual rate of growth (decrease by 16 % in 2000, increase by 10 - 16 % in 2002 - 2005). For the year of 2001, this income is predicted to amount to 27 bill. SKK with yearly growth rate of 7 %. The growth is caused by growing nominal wage after the year of 2002 (8 %) and by stagnating or slightly increasing employment (1 - 2 % yearly).

Income tax of juridical persons will continue to constitute an unstable part of total tax incomes. Its fulfilment in 2001 will be influenced by the management in the company sphere, but mostly by lower income tax rate (put into effect in 2000 with cumulative influence proven in 2001). A positive influence can also be attributed to the growth of export and domestic demand. In 2000, this tax was at the level of 25 bill. SKK; in 2001 it will be only 21 bill. SKK[41] (which means a decrease by 18 % caused by lower income tax). In 2002, the growth of 42 % is forecasted; in the following years an unstable development is expected.

The growth of income from the *value added tax* should be positively influenced by forecasted growth of household consumption in current prices (by 10 %) and expected growth of public consumption (by 9 %). In 2001, incomes from the value added tax are expected to

40. Tax rates applied on households and companies are not expected to lower until 2002 to such an extent that would fully compensate the increasing costs of living and producing.

41. The incomes from the income tax of juridical persons are budgeted at the level of 18.6 bill. SKK for the year of 2001; thus, an excess is predicted.

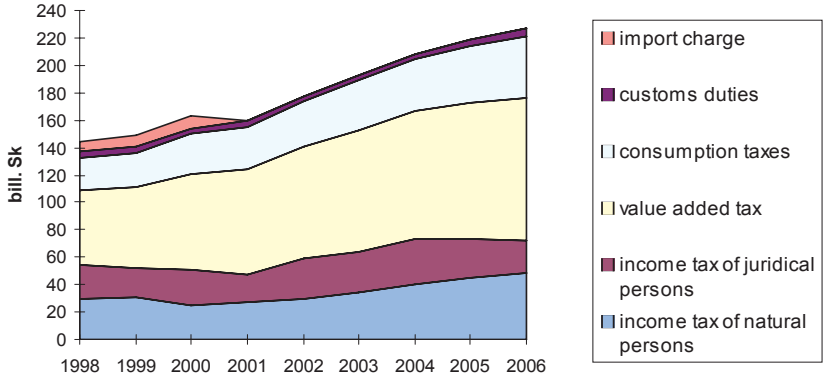
amount to 77 bill. SKK[42] , which represents a 9 % yearly growth rate. In years 2002 - 2005, the growth is forecasted to reach the rates of 6 - 9 % yearly. It is based on growing final consumption of households in current prices (by 9 % yearly) and final government consumption (by 7 - 9 % yearly).

The consumption taxes will be impacted on similar to the value added tax. For the year of 2001, the growth is predicted to reach 8 % (31 bill. SKK[43]). For years 2002 - 2005, the growth is forecasted to be between 6 and 9 % yearly.

The incomes of the state budget from *customs duty* represent only 2 % of total tax incomes of the state budget and prove a trend of gradual decrease, resulting from Slovakia's effort to become a member of several international organisations. Therefore, even though increasing domestic demand and nominal import are expected, the income from customs duty stagnates.

The trends in the development of the main types of tax incomes are shown in Graph 6.4.

Graph 6.4: Structure of the main types of tax incomes



Source: Statistical Office of the Slovak Republic

In the forecast period, the biggest and still increasing share is represented by indirect taxes, slightly decreasing share belong to direct taxes and rapidly decreasing share is given by incomes connected with import.

Total expenditures in 2001 should, according to the forecast estimations, reach the level of 245 bill. SKK (creating fiscal deficit of 38 bill. SKK), growing yearly by 1 %. The volume of the expenditures of the state budget in the forecast period will be determined by the development of incomes and by the endeavour not to enlarge the relative deficit. Considering the assumptions about the incomes in 2002 - 2005, the expenditures will increase by 3 - 9 % yearly.

[42] *The incomes from the income tax of natural persons are budgeted at the level of 65 bill. SKK for the year of 2001; thus, an excess is predicted.*

[43] *The incomes from the consumption taxes are budgeted at the level of 29 bill. SKK; thus, a subtle excess*

As a result of very expansive fiscal policy which lasted for several years and was characteristic of preferring investment expenditures of state budget, the last few years were a test of new financial policy. This was also the case of tax rate changes which took place in the years of 2000 and 2001. It was shown that postponing of the problems does not solve them but makes the costs increase exponentially.

According to both domestic and foreign experts, inadequate state consumption was one of the key problems of economic disequilibrium in Slovakia. Tax and non-tax incomes of the government were inadequately low compared to the expenditures. The government tried to cover this deficit by finances from private sources, which subsequently negatively affected the capital price at the financial markets and resulted not only in the unavailability of finances to the companies but also in increased costs of financing the public debt. The price of emissions of state obligations in 1999 and 2000 showed that the government was able to lower the costs of financing budget deficit, but the risk of enlarging the deficit in 2001 can open this problem again. This is one of the reasons why lowering interest rates are not expected during the forecast period.

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For the years of 2001 and 2002, based on econometric modelling, approximately 10 % overrun of budget tax incomes is expected. This difference was calculated by summing up various influences of the types of tax incomes. The value added tax has the biggest influence. Incomes from the types of taxes are calculated using estimated econometric equations (based on past development) and forecasted values of relevant macroeconomic indicators which influence taxes.

A variant scenario of macroeconomic development (based on the assumption that the budget tax incomes are fulfilled) was experimented with, with a goal to quantify direct as well as indirect effects of this scenario on macroeconomic development. It was shown that such a scenario cannot be captured by econometric model used.

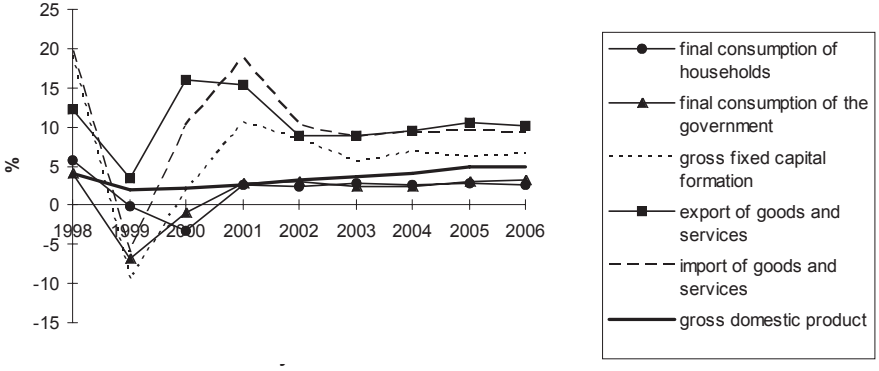
Gross domestic product

The finale stages of work on forecasting the economic development are marked by a concentration of extraordinary influences which enlarge the uncertainty of the estimation of future development. The biggest domestic influences are represented by the completion of the political cycle and postponed realization of government programme in reforms and privatization. Changes in the outer environment are implied by rapid development in international political environment, influences connected with which are difficult to estimate.

The forecast of GDP development was obtained by a modelled analysis of parts of

aggregate demand. The results of the forecast are in constant prices of 1995. Tables containing the results are in the Annex I (Tables 1 - 4).

Graph 6.5: Growth rates of parts of GDP (in constant prices of 1995)



Source: Statistical Office of the SR, forecast

Two of the pro-growth factors in development of Slovak economy in 2001 can be identified as a slowed inflation development and a growing domestic demand. The forecasted growth rate of domestic demand (5.1 %) will, however, not create a basis for bigger growth of economy dynamics. In this connection, the problem with negative influences of growing domestic demand comes to the attention. Growth of domestic demand will result in worsening trade balance and will thus lower the growth of GDP. The 4 % growth of domestic demand in the following years will constitute a basis for GDP growth in connection with increasing competitiveness of Slovak producers. A slight growth of domestic demand will be a barrier to inadequate increases of disequilibria in the economy. Growth of an economy based on growing domestic demand has to be supported by higher competitiveness of domestic producers and weakening non-market demand shocks.

The growth rate of *household consumption* at the level of 2.5 % in 2001 will mean a larger demand dynamics following the two years of decrease. The growth factors are the pay-out of the FNA obligations and subsequent short-term preference of consumption to savings. The purchasing power of a part of consumers will be maintained by a slow reform of public sector and deficit state budget. The development at the labour market will be counter acting and will not affect the consumption of households positively in years 2002 - 2006. The development of the consumption of households will be reduced by forecasted higher prices. The share of household consumption on GDP will decrease during the whole forecast period. The inertia of consumer behaviour is shown by the share of consumption on gross disposable income (88 %). Changes of the behaviour will increase this ratio to 90 %.

What was positive about the directed lowered demand of the public sector in 2000 was the influence of decreasing interest rates, which lowered the costs of financing the state debt. The increase of fiscal deficit to 38 bill. SKK will support the growth of the *consumption of public sector* but it will also limit the continuation of lowering interest rates. A basis for growth of public expenditures should be provided by the increase of tax and non-tax incomes, resulting from better economic environment. This growth will be slower - due to gradual and long-term tax payment reduction. The development of public consumption in the following years will depend on priorities of the government in reforms and in process of integration into EU and NATO. Based on the forecasted development of deficits of the state budget and on the priorities of the government, the growth of the government consumption is forecasted to be between 2.3 % and 3.2 %. According to forecasted development, share of public spending on GDP should decrease from 19.3 % in 2001 to 18.1 % in 2006. The decrease would show the dynamics of GDP higher than that of government consumption.

The growth of *gross fixed capital*, following a drop in 1999 and stagnation in 2000, could be a positive factor of future development. An increase by 12.3 % in 2001 and by 7.4 - 9.2 % in the following years is predicted. Higher dynamics of investments will be limited by barriers for long-term ineffective companies to reach financial resources. The main negative result of the growth of investing activity will be a stronger pressure to increase import. Rate of investment which would be higher than forecasted could be made possible by higher rentability of companies and their ability to reach financial resources on the capital market. Uncertainty stems mainly from the estimation of future development of foreign investments and capital expenditures of the state budget. The volume of capital expenditures of the state budget will be influenced mainly by the political cycle and budget management. A risk is also incorporated in the decreasing volume of gross fixed capital in the European Union. Investments of companies and households will be determined by company ambience and by NBS policy in combination with activities of other banks. The necessity to enlarge the competition ability will demand high investment expenditures. With effective allocation of capital, higher competitiveness on both domestic and foreign markets can be expected in next periods. The growth of gross fixed capital formation, much higher than the one of GDP, will result in its share on GDP (in constant prices) increased up to 39.2 % in 2006. The reason for this figure is also a low share of household consumption on GDP - low compared to market economies.

A natural basis for the growth of *domestic demand* in 2001 will be the lower comparison basis - understandably, after two years of decrease of domestic demand.

Due to the size and structure of Slovak economy, the export and import of goods and

services have a big effect on GDP development. While forecasting import and export, mainly expected development of the world trade was taken into account. As a factor mainly influencing the export the prices of domestic producers can be identified. The prices of domestic producers are affected by prices of inputs, production prices and exchange rate. Therefore, an important factor is also the development of producer price index. Import reacts to domestic demand, but also to changes in exchange rates or changes in the prices of world export. Due to import intensity of export, the export prices are influenced by the import prices, too.

Even though worse economic development in foreign countries is predicted for the fourth quarter of 2001, the exporters will maintain their competitiveness. This will be a base for 15.4 % increase of *export* in 2001. In 2002 - 2006, the export will grow by 8.8 - 10.6 %. After lowering domestic barriers to import, the growth of *import* in 2001 will increase to 18.6 % and in 2002 - 2006 it should be between 8.7 - 10.1 %. Higher imports can be expected as a result of larger involvement of foreign investors, higher domestic demand and lower import barriers. The result of the development in exports and imports will prove in continuing *deficit of the trade balance*. As a result of future effects, implied by current high investment rate and slightly depreciating exchange rate of Slovak crown, a slight domination of export dynamics over the import one is forecasted for the years 2003 - 2006. In constant prices, this will result in decreasing deficit of net foreign demand. The foreign trade balance in current prices will increase in absolute values; however, in comparison with GDP it will stagnate.

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The continuation and slight increase in growth rate of GDP (3.2 - 5.0 %) will be a result of the revival of Slovak economy. The emphasis of the NBS concentrated on inflation targets and realized owners replacements in the banks will create an environment with lower preference of risk. This carefulness will be one of the reasons for lower dynamics of economy - lower than necessary to reach the level of the EU countries. If the development of the economic environment led to lower price development than in the mentioned forecast, a higher growth of the demand in constant prices could be reached. Of course, higher growth could be achieved by existence of more favourable economic environment compared to the assumptions. The positive side of the forecasted development should be the direction towards equilibrium economy and its balanced development.

6.3 Forecast of health insurance system incomes in 2001 - 2006

The base scenario of *ex ante* prognosis is based on previous analyses. This scenario is built by the forecast of economic development calculated by the ISWE01q4 model. On the side of calculation of incomes of health insurance system, the ex post scenario was used. In the scenario, incomes for particular groups of people - in such designed system as to be rational and optimal - were calculated. A demographic projection was an important input to the forecast. Base scenario was built up on these fundamental platforms [44].

In the following part, the particular health insurance system incomes by groups will be described - payments from employment, incomes from the National Institute of Labour for unemployed, and payments from the state.

Payments from employment

Payments from employees, employers and self-employed persons belong to this group.

Payments from employers and employees are based on the projection of the employment and wages. Employment and wages are used for calculation of the rewards of employees which create the base for health insurance system payments. For calculation of payments of self-employed persons, the gross wages and salaries were used. The enormous changes in percentages for payment calculation after the year 2000 were not assumed.

Table 6.6: Health insurance system incomes from employment

	2 001	2 002	2 003	2 004	2 005	2 006
Employment (thousand persons)	2 013.2	2 040.5	2 059.3	2 102.6	2 149.0	2 186.0
Nominal wage (SKK)	10 798	11 850	12 290	13 334	14 437	15 617
Gross wages and salaries (bill. SKK)	303.8	330.3	361.8	400.7	442.9	487.1
Rewards of employees (bill. SKK)	393.8	427.5	467.6	517.0	570.7	626.8
Income of health insurance system (mill. SKK)						
Employees	8 135	8 888	9 780	10 844	12 153	13 577
Employers	21 906	23 300	25 269	27 619	30 509	33 653
Self-employed	1 432	1 534	1 670	1 831	2 030	2 246
Others	283	272	276	280	284	289
Total	31 756	33 994	36 995	40 575	44 976	49 764

[44] *The forecast was made in the time when the final figures for the year 2001 were not yet accessible. That is why the year of 2001 is considered a part of a forecast period.*

A growing dynamics of the labour market is awaited till the year of 2006. The number of the employed persons should reach 2 186 thousand. Nominal wage being more than 15 thousand SKK, the rewards of employees will reach the level of 626.8 bill. SKK. Incomes of health insurance system paid by employees will increase from 8 135 mill. SKK in 2001 to 13 577 mill. SKK in 2006. The percentage levy not being changed, the incomes from the employers will amount to 33 653 mill. SKK in 2006. Total amount of health insurance incomes from employment will increase from 31 756 mill. SKK in 2001 to 49 746 mill. SKK in 2006.

Unemployed

To calculate health insurance income from unemployed, two groups had to be considered: the first group - the unemployed receiving unemployment benefits, and the second group - the unemployed not receiving unemployment benefits. The National Institute of Labour pays for the first group. The state pays for the second group. It is necessary to mention that there is only about 40 % of unemployed in the first group - only 40 % of unemployed receive unemployment benefits. The long-term unemployed do not receive unemployment benefits. Instead, these unemployed receive social benefits and health insurance payments are done by the state. No radical changes in the ratio between these two groups are assumed.

Table 6.7: Health insurance system payments from the unemployed

	2 001	**2 002**	**2 003**	**2 004**	**2 005**	**2 006**
Unemployed	499.8	491.7	496.9	493.8	486.7	478.4
Unemployed receiving unemployment benefits	199.9	196.7	198.8	197.5	194.7	191.4
Unemployed not receiving unemployment benefits	299.9	295.0	298.1	296.3	292.0	287.1
Paid by the NIL (mill. SKK)	2666	3626	3915	4104	4425	4722
Paid by the state (mill. SKK)	3943	5440	5873	6156	6637	7083
Total	6610	9066	9788	10259	11062	11804

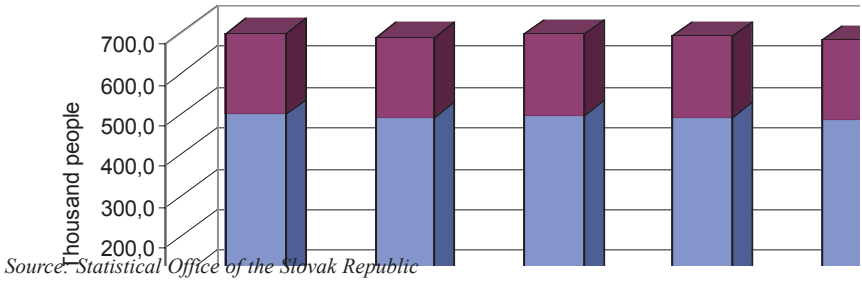
As can be seen from the Table 6.7, the number of the unemployed gradually decreases in the period of 2001 - 2006 from the level of 499.8 thousand to 478.4 thousand people. Keeping the proportions unchanged, the amount of unemployed not receiving unemployment benefits will decline from 299.9 to 287.1 thousand. The number of unemployed receiving unemployment benefits will reach the level of 191.4 thousand in the year of 2006.

An assumption based on ex post is held that 14 % of the average nominal wage should be paid for both groups. The difference should remain only in the payer of health insurance.

For both groups in total, 6 610 - 11 804 mill. SKK should be paid in the years of 2001 -

2006. Holding on to the assumption of unchanged proportion, 60 % of this sum of money will come from the state financial resources.

Graph 6.6: Unemployed

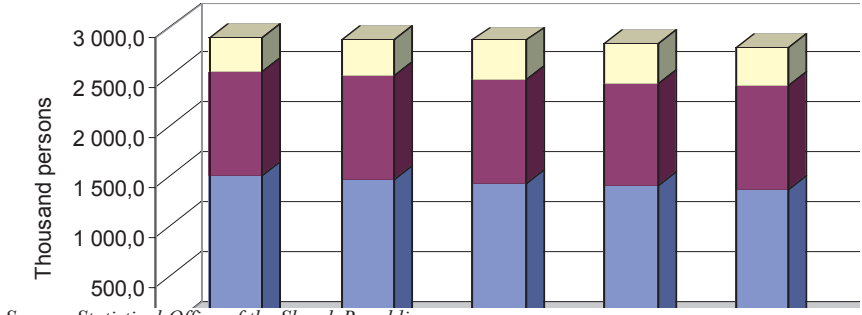


Source: Statistical Office of the Slovak Republic

Payments of the state

The state pays[45] to social insurance system for unprovided-for children, retired persons and others [46]. As a number of unprovided-for children the number of people in the age group of 0 - 14 years was taken and added to 55 % of the number of people in the age group 15 - 24 years (this represents students at high schools and universities).

Graph 6.7: Policyholders of the state



Source: Statistical Office of the Slovak Republic

The baseline for calculating the number of retired people is the age group of 60 and more years and about 80 % of the number of people in age group 55 - 59 is added to it. These are mainly women, because of their lower retiring age, and men earlier retired. Due to planned

[45] *Understandably, it also pays for the unemployed not receiving unemployment benefits.*

[46] *For example persons taking care of a baby, young men in military service, etc.*

equalization of retiring age for men and women this percentage (80 %) was considered continuously lowering in the prognosis.

From the demographic trends number of children will decline form 1.5 mill. in 2001 to 1.3 mill. in 2006. Despite the equalization of retiring age the number of retired persons will decline only slightly.

Table 6.8: Payments of the state to the health care system

	2 001	2 002	2 003	2 004	2 005	2 006
Unprovided-for children (thous.)	1 504.3	1 469.6	1 435.6	1 403.4	1 374.4	1 346.3
Retired (thous.)	1 053.3	1 044.6	1 035.2	1 024.7	1 028.9	1 034.6
Others (thous.)	335.4	364.0	389.0	397.8	390.3	391.0
Payment (mill. SKK)						
Unprovided-for children	10 333.0	11 448.7	11 971.1	12 475.1	13 015.8	13 563.3
Retired	7 185.3	8 015.9	8 509.6	8 996.2	9 503.2	10 153.6
Others	2 163.7	2 552.3	2 965.2	3 380.7	3 689.5	3 852.1

As a base for payments the average minimal wage was taken. In the trends of minimal wage price development was taken into consideration.

The payments of the state for children to the health insurance system will, in the base scenario, grow from 10.3 bill. SKK in 2001 to 13.6 bill. SKK in the year of 2006. Payments for retired persons will grow from 7.2 bill. SKK to 10.2 bill. SKK. The state will pay 2 -3 bill. SKK for the other state policyholders.

Table 6.9: Total income of health insurance system

	2 001	2 002	2 003	2 004	2 005	2 006
Income from employment	33 994	36 995	40 575	44 976	49 764	54 765
From employees	8 888	9 780	10 844	12 153	13 577	15 064
From employers	23 300	25 269	27 619	30 509	33 653	36 937
Self-employed people	1 534	1 670	1 831	2 030	2 246	2 472
Others	272	276	280	284	289	293
Paid by the state	27 457	29 319	31 008	32 846	34 652	36 602
Unprovided-for children	11 449	11 971	12 475	13 016	13 563	14 119
Retired	8 016	8 510	8 996	9 503	10 154	10 850
Unemployed not receiving unemployment benefits	5 440	5 873	6 156	6 637	7 083	7 532
Others	2 552	2 965	3 381	3 689	3 852	4 101
Paid by the NIL	3 626	3 915	4 104	4 425	4 722	5 021
Total income	65 077	70 229	75 686	82 247	89 137	96 389

Total income of the health insurance system

The Table 6.9 summarizes the payments for particular subjects calculated in the base scenario. Total payments will increase from 65.1 bill. SKK in 2001 to 96.4 bill. SKK in 2006. Income from employment will be still higher than payments from the state and the National Institute of Labour.

6.4 Alternative scenarios of trends in health insurance system incomes

The alternative scenarios of trends in incomes of the health insurance system were based on further analyses and possible ways of changes of payment system in the future. Several cases were analysed - maintaining the present state of payment base, growing payment base at the rate of inflation and some modifications in payment system. These scenarios can help to fully understand the mechanism of health insurance income system. They can show ways of payments different from the forecast offered in the part 6.3, which is the description of optimal income system in the view of the authors. This system will lead to decreasing imbalance and lower deficit of health insurance system. On the other hand, it will strongly impact the state budget.

Scenarios with unchanged system of payments

Two scenarios with unchanged payment system were made. Payments from employees, employers and self-employed people remain without changes. Payments from the state and the National Institute of Labour will be based on payment base. In the scenario S1, the payment base will be 2 700 SKK - the present value. 14 % of this amount is calculated as the payment. In S2 scenario, the same percentage payment as in scenario S1 is assumed, but the payment base is presumed to change according to the inflation - CPI growth. The S3 scenario is based on scenario S1. A 1 % decrease of unemployment rate was calculated and the impact on the payments of the state and the NIL was examined.

Scenario S1 - maintaining the present state

In this scenario the case of keeping the present state in the health insurance system of payments was examined. This means that the payments will be 14 % out of the base (2 700 SKK) till the year 2006. Because of bad demographic and labour market trends only a slow growth of the health insurance system incomes can be awaited followed by deepening imbalance of the HIS.

Table 6.10: Incomes of the HIS by the S1 scenario (mill. SKK)

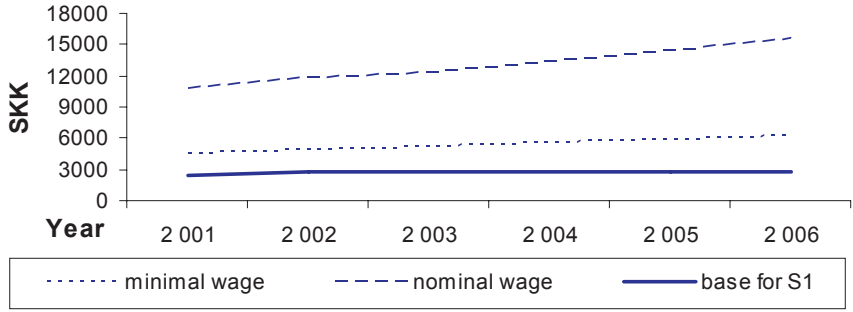
	Absolute values						
	2 000	2 001	2 002	2 003	2 004	2 005	2 006
Income of the HIS from employment	31 756	33 994	36 995	40 575	44 976	49 764	54 765
employees	8 135	8 888	9 780	10 844	12 153	13 577	15 064
employers	21 906	23 300	25 269	27 619	30 509	33 653	36 937
self-employed	1 432	1 534	1 670	1 831	2 030	2 246	2 472
others	283	272	276	280	284	289	293
Paid by the state	11 184	12 874	14 394	14 325	14 163	13 996	13 875
children	5 478	6 066	6 666	6 512	6 366	6 234	6 107
retired	3 809	4 247	4 738	4 696	4 648	4 667	4 693
unemployed	750	1 209	1 338	1 352	1 344	1 325	1 302
others	1 147	1 352	1 651	1 765	1 805	1 771	1 774
Payments of the NIL	526	806	892	902	896	883	868

As can be seen from the Table 6.10 and from Annex II, total incomes of the health insurance system would under the conditions of S1 scenario grow from 47.6 bill. SKK by 22 bill. This means that in the year of 2006 the total incomes of the HIS will reach the level of 69.5 bill. SKK. Compared to the base scenario, the incomes would be less by 20 bill. (see Annex II/1 for details). This differentiation is caused by lower payments of the state because of the lower payment base. In the standard forecast, the base is minimal and nominal wage (see Table 6.11 and Graph 6.8).

Table 6.11: Base of payment and nominal wage

	2 001	**2 002**	**2 003**	**2 004**	**2 005**	**2 006**
Minimal wage	4530	4849	5173	5520	5874	6243
Nominal wage	10798	11850	12290	13334	14437	15617
Base for S1	2400	2700	2700	2700	2700	2700

Graph 6.8: Development of the base of payments



This scenario confirmed the expectations. Diminishing payments of state will decrease the budget tension by approximately 22 bill. SKK. Taking inflation into consideration, real incomes per capita will decrease. This will lead to worsening situation in the health insurance system. The system will be neither able to cover current expenditures from internal sources nor diminish imbalances from the past.

Scenario S2 - growing payment base

As far as payment base setting from the year 2003 onwards is considered, a legislation process that will take inflation into consideration was assumed in scenario S3[47]. The calculation is based on the fact that the level of the base for current year will be equal to the base from the last year adjusted for last year inflation [48] (Table 6.12). By means of this, the deepening imbalance caused by price development could be eliminated.

Table 6.12: Payment base in S2

	2001	2002	2003	2004	2005	2006
Minimal wage (SKK)	4 530	4 849	5 173	5 520	5 874	6 243
Nominal wage (SKK)	10 798	11 850	12 290	13 334	14 437	15 617
Payment base for S2 scenario	2 400	2 700	2 880	3 074	3 271	3 476
CPI	1.5	1.7	1.8	1.9	2.0	2.1
Inflation	7.6 %	6.7 %	6.7 %	6.4 %	6.3 %	6.2 %

Lower growth of the HIS income compared to the base scenario in part 6.3, but higher than in scenario S1, was awaited. Higher growth should be reached by means of payment base growth.

Table 6.13: Incomes of the HIS by the scenario S2 (mill. SKK)

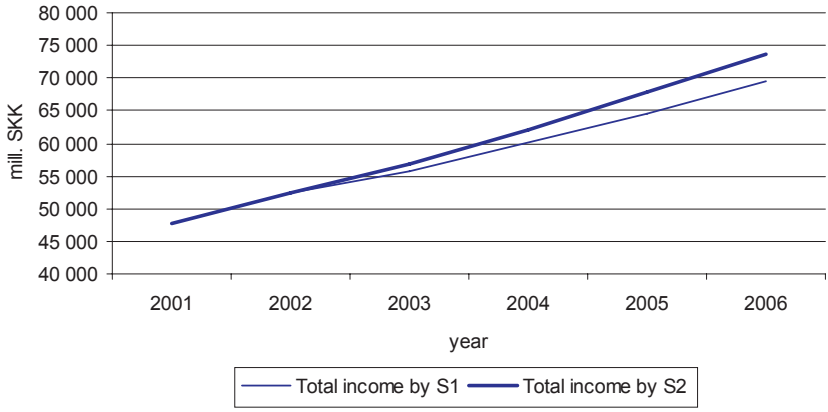
	Absolute values						
	2 000	**2 001**	**2 002**	**2 003**	**2 004**	**2 005**	**2 006**
Income of the HIS from employment	31 756	33 994	36 995	40 575	44 976	49 764	54 765
employees	8 135	8 888	9 780	10 844	12 153	13 577	15 064
employers	21 906	23 300	25 269	27 619	30 509	33 653	36 937
self-employed	1 432	1 534	1 670	1 831	2 030	2 246	2 472
others	283	272	276	280	284	289	293
Paid by the state	11 184	12 874	14 394	15 281	16 124	16 956	17 864
children	5 478	6 066	6 666	6 947	7 248	7 552	7 862
retired	3 809	4 247	4 738	5 009	5 292	5 654	6 042
unemployed	750	1 209	1 338	1 443	1 530	1 605	1 676
others	1 147	1 352	1 651	1 882	2 054	2 145	2 283
Payments of the NIL	526	806	892	962	1 020	1 070	1 118
Incomes of the HIS	43 466	47 674	52 281	56 817	62 120	67 790	73 747

[47] *The level of payment base for the year 2002 is already known, therefore the change of system since 2003 describes the reality more accurately.*

[48] *Multiplied by the CPI.*

A short list of the HIS incomes in S2 scenario is to be found in the Table 6.13, more information is in the tables in the Annex II (Table II/2). It is observable that the total incomes do not reach the level of base scenario. There is almost 20 bill. difference again. However, the incomes are higher by 1 bill. in the year 2003, and by 4 bill. in the year 2006. This would be caused by the incomes from the state and the NIL again.

Graph 6.9: Incomes of the HIS by S1 and S2



The results of this scenario fulfilled the expectations. By valorisation of the payment base the system will achieve higher incomes compared to the scenario S1. These differences are lower when compared to the base scenario. Thus, it can be concluded that these incomes could provide present state of the HIS that is not convenient. Such a system would be able to avert increasing crisis only in the case of distinct rebuilding of internal redistribution mechanism. These conditions would be even able to slightly improve the health insurance system but it is not possible to moderate imbalances from the past. The other side of this model of the HIS financing is its higher budgetary demandingness compared to the S1 scenario.

It would be necessary to use external sources (e.g. World Bank credits) to diminish imbalances from the past.

Scenario S3 - decline of the unemployment rate by 1 %

A 1 % decrease of unemployment rate in each year compared to the results of base scenario[49] was assumed. S1 scenario being the base, fixed payments and the payment base of 2 700 SKK were used. An attempt to show the positive impact of employment policy on

[49] *Respecting the ceteris paribus condition.*

the health insurance system was made. An idea is held that if the employment increases the number of people paying higher fees[50] to the HIS shall also increase. Growth of the HIS income will be also supported by the payments from the employers. Decreasing payments of the state and the NIL will secondarily decline the budget tension. The numbers of the unemployed in scenario S1 and scenario S3 are described in the Table 6.14. It is necessary to mention that the proportion between the unemployed receiving unemployment benefits and those who do not receive the benefits remains the same.

Table 6.14: Employment in scenario S3

		2001	2002	2003	2004	2005	2006
Base scenario	**Employed persons**	2 013	2 041	2 059	2 103	2 149	2 186
	Unemployed persons	500	492	497	494	487	478
	Economically active	2 513	2 532	2 556	2 596	2 636	2 664
	Unemployment rate	20.0 %	19.6 %	19.6 %	19.3 %	18.7 %	18.2 %
Scenario S3	**Employed persons**	2 037	2 068	2 087	2 131	2 176	2 214
	Unemployed persons	476	464	469	465	460	450
	Unemployment rate	19.1 %	18.5 %	18.5 %	18.2 %	17.7 %	17.1 %

The results of this scenario are to be found in the Table 6.15 and in the Annex II (Table II/3). It is obvious that the income grows by 0.5 bill. SKK in 2001 and 0.6 bill. in 2006. The income from employment will grow by 0.6 - 0.7 bill. SKK. The payments of the state and the NIL will decline by 0.1 bill. These changes are calculated compared to the scenarios S1 and S3. Changes against the base scenario are very small.

Table 6.15: Incomes in the scenario S3 (mill. SKK)

	Total values						
	2 000	**2 001**	**2 002**	**2 003**	**2 004**	**2 005**	**2 006**
Income of the HIS from employment	31 756	34 408	37 511	41 138	45 607	50 395	55 491
employees	8 135	9 011	9 934	11 012	12 341	13 764	15 280
employers	21 906	23 572	25 609	27 990	30 924	34 068	37 414
self-employed	1 432	1 553	1 693	1 856	2 058	2 274	2 504
others	283	272	276	280	284	289	293
Paid by the state	11 184	12 816	14 318	14 249	14 084	13 923	13 798
children	5 478	6 066	6 666	6 512	6 366	6 234	6 107
retired	3 809	4 247	4 738	4 696	4 648	4 667	4 693
unemployed	750	1 152	1 263	1 276	1 266	1 252	1 225
others	1 147	1 352	1 651	1 765	1 805	1 771	1 774
Payments of the NIL	526	768	842	851	844	835	816
Incomes of the HIS	43 466	47 992	52 672	56 238	60 535	65 153	70 106

[50] *Compared to the payments of the state and the NIL.*

This scenario confirmed the hypothesis about the growth of total incomes due to higher growth of incomes from employment of population. It is noticeable that increasing employment can help to increase the HIS incomes. The growth of employment can also affect the cost of health sector, in the opinion of the authors. An idea is held that the unemployed use the health care services - and also the health insurance benefits - more often (and frequently gratuitously).

The 1 % change can be, in the case of high unemployment (as in the case of Slovakia nowadays), considered distorted and unimportant. However, if hypothetical 15 % unemployment rate is calculated with, the results become more of value.

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From scenarios S1, S2, and S3 several conclusions can be drawn. In the case of unchanged system of payments, the imbalance of health insurance system can become more serious. In the case of valorisation by the rate of inflation, it can be awaited that the situation will not get worse too much. 1 % decrease of unemployment will not bring enormous changes. If the change was more significant (5 - 6 %), the effect would be more of value.

To conclude, if the present system of payments persists, the employment should be highly supported. Valorisation of the payment minimum by inflation should be asserted as well. Such a model of financing the health insurance system should, in the case of optimizing the redistribution process, neither increase existing imbalances nor create new ones. The imbalances from the past should be funded by external sources[51].

Table 6.16: Incomes in scenario S4 (mill. SKK)

	Total values						
	2 000	**2 001**	**2 002**	**2 003**	**2 004**	**2 005**	**2 006**
Income of the HIS from employment	31 756	32 760	35 655	39 109	43 356	47 975	52 800
employees	8 135	8 293	9 134	10 138	11 372	12 715	14 117
employers	21 906	22 695	24 613	26 901	29 715	32 776	35 974
self-employed	1 432	1 500	1 632	1 790	1 984	2 195	2 416
others	283	272	276	280	284	289	293
Paid by the state	11 184	21 573	23 036	24 363	25 807	27 226	28 759
children	5 478	8 995	9 406	9 802	10 227	10 657	11 094
retired	3 809	6 298	6 686	7 068	7 467	7 978	8 525
unemployed	750	4 274	4 614	4 837	5 215	5 565	5 918
others	1 147	2 005	2 330	2 656	2 899	3 027	3 222
Payments of the NIL	526	768	842	851	844	835	816
Incomes of the HIS	43 466	55 101	59 534	64 323	70 007	76 036	82 376

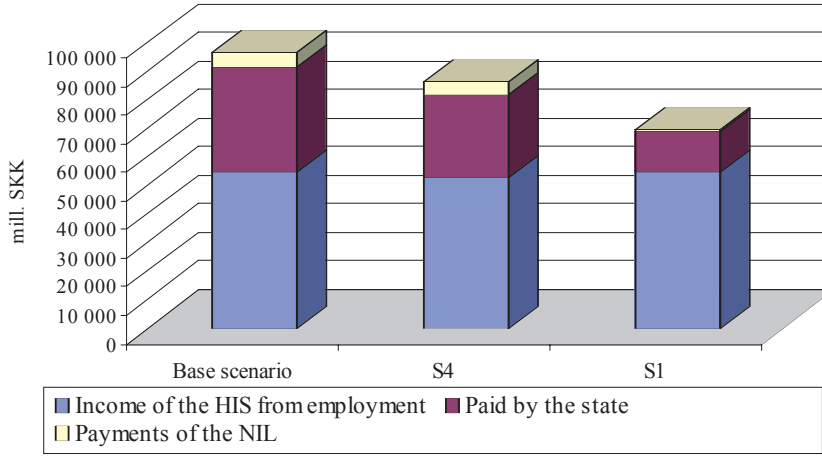
[51] *Due to non-exact quantification of this secondary influence, this is not calculated with, and so the number of employed persons remains the same in further calculations.*

Scenarios with changed payment system

S4 scenario represents a modification of the base scenario described in the part 6.3. The idea of this scenario remains the same. Considering the high budget tension of this scenario, the payment ratio was reduced to 11 %. This could be considered a kind of compromise which would - mostly by decreasing the payments of the employees - increase the labour demand consequently .

As can be seen from the Table 6.16 and from the Table II/4 in the Annex, a modified type of payments (minimum, respectively nominal wage as the payment base) and decreasing percentage levy compared to the base scenario should decline the HIS incomes approximately by 8 - 10 bill. SKK. But the incomes should be 1 - 17 billion higher compared to scenario S1 - describing unchanged situation. Compared to the base scenario, the fiscal and NIL tensions are lower. Also the incomes from employment should decline, but not as much as the fiscal tension should decrease.

Graph 6.10: Payments by scenarios in 2006



This scenario has lower incomes than the base scenario. The incomes are markedly higher than in S1 scenario. Here, the place for improvement of the health insurance system can be seen. These incomes can lead to a slight improvement and decreasing of the imbalances. In the case of some additional external sources the situation in health care sector can be improved significantly.

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The changed system of financing, which would level up the compensatory basis to the level of minimum wage or - for the unemployed persons - to the level of average nominal

wage, would provide for a subsequent decrease of percentage contribution. As well as in this case the resources would flow into the system, which would not create new imbalances and / or improve the existing imbalances. The decrease of percentage contribution, on the one hand, would result in the ease-off of the budget; on the other hand, it would support the demand for labour, which could finally increase the revenues even more. By the decrease of contributions the pressure on the budget resources would be lowered. In the case of additional external resources this system would be able to cope with imbalances.

Scenario S5 - without payments of the state

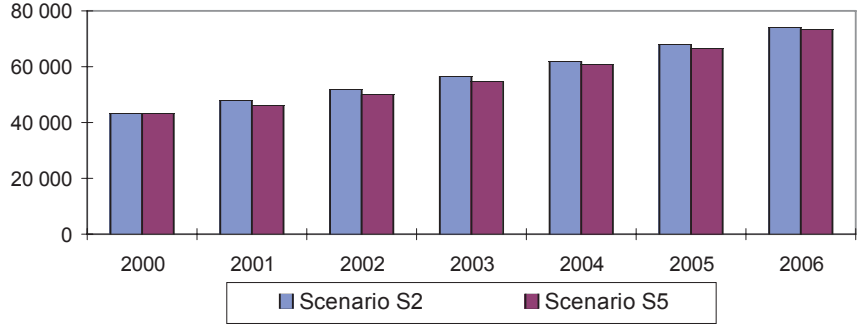
This scenario was created under an assumption that the state would not pay any contributions for its policyholders. The obligations to pay contributions would be taken by employed persons in order that the revenues of insurance companies stayed proportionally the same. The rate of insurance contribution was computed for the year of 2000. It was expected that the state would not pay any contributions, while the revenues of health insurance companies would be at the same level, i.e. at the level of 43.5 billion SKK. It was concluded that the employees should pay contributions at the level of 21 % from the assessment basis. Similarly, the income tax for natural persons would be lowered. This change would be - from the point of view of state and households - budgetary neutral.

Table 6.17: Revenues of health insurance companies, scenario S5, bill. SKK, current prices

	Absolute values						
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Contributions from employment	43 466	45 935	49 941	54 704	60 586	66 966	73 650
employees	11 135	12 010	13 203	14 620	16 371	18 270	20 258
employers	29 984	31 484	34 112	37 237	41 098	45 285	49 673
self-employed persons	1 960	2 073	2 254	2 469	2 735	3 022	3 324
others	387	368	373	378	383	389	394
Paid by the state for	0	0	0	0	0	0	0
unprovided-for children	0	0	0	0	0	0	0
pensioners	0	0	0	0	0	0	0
registered unemployed without unemployment benefits	0	0	0	0	0	0	0
others	0	0	0	0	0	0	0
Paid by the National Institute of Labour	0	0	0	0	0	0	0
Revenues of health insurance companies	43 466	45 935	49 941	54 704	60 586	66 966	73 650

As can be seen from the Table 6.17, the revenues of health insurance companies from employment will increase in each group in comparison to other scenarios. These revenues are the same as the total revenues of health insurance companies. If the revenues of this scenario are compared to the scenario S2, there are no big differences found between them. It is obvious that the revenues computed in the scenario S5 are lower by several billion SKK. These two scenarios are graphically compared in the Graph 6.11.

Graph 6.11: Comparison of S2 and S5 scenarios



This scenario has some advantages when compared to the scenarios in which the state pays the health insurance (premiums) for its policyholders. The revenues of health insurance companies would become independent from the state, i.e. the state would not be able to change the level of the compensatory basis in the state budget as it was in the past. The process of paying premiums would become easier, because the individual payments of employed persons would flow directly into the health insurance companies. In the present system, the citizens pay taxes to the state budget and - following that - the health insurance companies get the resources for the state policyholders from the state budget. By this system of financing health service, the tax burden would be proportionally lowered; especially the income tax of natural persons would decrease. As a result, the tax burden of households would not increase by this measure.

It has to be noticed that the revenues of the health insurance companies would be more sensitive to the changes in employment, i.e. under higher unemployment the revenues of health insurance companies would decrease more that they would in other scenarios. This is because under the present system of paying premiums and under increased unemployment the income of employed persons decreases, while the payments of the state or of the National Institute of Labour increase. In the scenario S5, the decrease of revenues is not compensated by anything.

6.5 Prognosis of expenses development of health care in Slovak Republic

As the database for the future expenses development of the health care, the expenses of the health insurance companies in the past according to the individual ways of application were used. These expenses were increased by the position change in liabilities of individual subjects and by the one-off subsidies from the state budget or from the revenues from the

privatisation. In this way, a more realistic picture of effective expenses of individual health care subjects was received - more realistic than the one provided only by the expenses of health insurance companies.

Similarly, the revenues of health insurance companies were calculated. From the revenues of health insurance companies the position change in credits, loans and return financial assistance of health insurance companies were subtracted. Again, a more realistic picture of effective returns of health insurance companies was attained. Since the payments from the state budget directly to the health care providers are considered non-systematic, the present returns of health insurance companies can be considered as the returns of the health care system, regardless of direct payments of citizens during delivering the health care services. It is important to point out that in individual future scenarios the loans and credits were not taken into account; also the revenues and returns are equal for the future.

The notion "deficit" should be understood as the difference between this-way estimated expenditures and returns of health care system. It would be adequate to use (from the accountancy terminology) the term "profit" or "loss", but because of the lucidity and the character of health care the notion "deficit" will be used further.

Table 6.18: Expenditures of Slovak health care system, in billion SKK, current prices

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Primary out-patient care total	3 012	4 704	4 993	4 442	4 585	5 006	6 300	7 200	8 100	9 100	10 600	12000
of it dental care	1 317	1 957	2 659	2 250	2 071	2 056	2 414	2 600	2 750	2 900	3 100	3300
Out-patient care specialised	1 666	2 709	3 318	3 271	3 260	3 653	4 300	5 000	5 700	6 500	7 500	8500
Common curative and rehabilitative care	2 538	2 914	3 331	3 709	2 888	4 154	4 094	4 500	4 700	5 000	5 400	5900
Transport health care service	545	825	716	711	530	744	900	1 100	1 300	1 500	1 700	2000
Pharmaceuticals dispensed to out-patients	7 034	9 996	11 413	13 080	12 381	16 495	17 186	18 582	19 977	21 373	22 769	24 200
Health care aids	586	948	1 364	1 094	1 250	1 328	1 530	1 654	1 778	1 902	2 026	2150
In-patient care total	13 031	14 669	16 785	19 434	22 665	21 145	23 542	24 269	25 397	26 825	28 653	30 200
Health-resort care	298	371	368	403	416	430	464	488	530	570	600	640
Other payments for health care	484	1 189	1 747	2 401	1 026	587	1 307	1 326	1 346	1 365	1 385	1400
Total expenditures	**29 194**	**38 325**	**44 035**	**48 545**	**49 001**	**53 542**	**59 622**	**64 119**	**68 828**	**74 135**	**80 632**	**86 990**
Deficit	**-3 200**	**-4 057**	**-7 407**	**-9 087**	**-10 365**	**-14 089**						
Receipts from payments	**25 994**	**34 268**	**36 628**	**39 458**	**38 636**	**39 453**						
Increase of non-paid premiums		616	3 003	2 269	2 226	668						

Prognosis of expenditures of health care system in Slovakia

The past development and the results of prognosis of expenditures of the Slovak health care system can be found in the Table 6.18 and their structure in the Table 6.19.

The present development can be characterised by the growth rate, on average, of 10 %. Uneven development can be accounted for by enormous administrative interferences into the health care system. These manifested themselves mainly in the attempts to regulate the system, in uneven changes of the payment volume of the state into the system, and in uneven, non-transparent and unforeseen one-off state subsidies to individual subjects of the system.

The deficit of the health care, understood as the difference between estimated expenses of health care and effective returns of health insurance companies created by the obligatory payments of citizens and of the state, was high in the past. Gradually it increased from 4 billion SKK in 1996 to 14 billion SKK in 2000. This deficit increased not only absolutely, but relatively as well. In 1996 it represented "only" 11 % of expenditures of the health care, in 2000 26 % already.

For the future, the increase of expenditures on the health care is expected, with the growth rate of 7 - 9 %. That is 1 - 3 percentage points more than the inflation in the prognosis period. Total expenditures in 2000 should amount to 87 billion SKK in current prices.

Table 6.19: Structure of expenditures of the Slovak health care system, in %

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Primary out-patient care total	10.3	12.3	11.3	9.2	9.4	9.3	10.6	11.2	11.8	12.3	13.1	13.8
of it dental care	4.5	5.1	6.0	4.6	4.2	3.8	4.0	4.1	4.0	3.9	3.8	3.8
Out-patient care specialised	5.7	7.1	7.5	6.7	6.7	6.8	7.2	7.8	8.3	8.8	9.3	9.8
Common curative and rehabilitative care	8.7	7.6	7.6	7.6	5.9	7.8	6.9	7.0	6.8	6.7	6.7	6.8
Transport health care service	1.9	2.2	1.6	1.5	1.1	1.4	1.5	1.7	1.9	2.0	2.1	2.3
Pharmaceuticals dispensed to out-patients	24.1	26.1	25.9	26.9	25.3	30.8	28.8	29.0	29.0	28.8	28.2	27.8
Health care aids	2.0	2.5	3.1	2.3	2.6	2.5	2.6	2.6	2.6	2.6	2.5	2.5
In-patient care total	44.6	38.3	38.1	40.0	46.3	39.5	39.5	37.9	36.9	36.2	35.5	34.7
Health-resort care	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7
Other payments for health care	1.7	3.1	4.0	4.9	2.1	1.1	2.2	2.1	2.0	1.8	1.7	1.6
Total expenditures	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

In the field of *primary out-patient care* it is supposed that it will gradually begin to take over some of the services up till now accomplished only by the in-patient care facilities. It is also supposed that the patients will still have to pay for some "over-standard" services in primary out-patient care. Because of these contrary trends, nominal increase of expenditures by 12 to 16 % is assumed. Percentage share of primary out-patient care on the total expenditures of health care should gradually increase from 9 % in 2000 to 14 % in 2006. The expenditures in 2006 should amount to about 12 billion SKK.

Dental out-patient care, as a part of out-patient care, will stagnate in constant prices in the field of expenditures financed from the system of health care insurance. It will be the consequence of allowing a majority of expenditures to be covered by direct payments of patients. The expenditures will grow by 5 to 7 % yearly; the share on the total expenditures will gradually decrease from 4.1 % in 2002 to 3.8 % in 2006. In 2006, the expenditures financed from the system will amount to approximately 3.3 billion SKK.

The *specialised out-patient care* will begin to take over the functions up till now accomplished only by in-patient health care facilities. That is why the growth of its share on the total expenditures of the system is supposed, from 7 % in 2000 to as much as 10 % in 2006. This represents the increase of nominal expenditures by 13 - 16 %. In 2006, the expenditures will amount to approximately 8.5 billion SKK.

In the field of *common curative and rehabilitative care*, the future development is unclear. In the future, its administrative incorporation into other parts of health care is possible. A real stagnation of expenditures financed directly from the system of health care insurance is supposed. Its share on total expenditures should stagnate at the level of about 7 %.

In transport health care services, a steady necessity of equipment modernisation is assumed. For that reason, a yearly increase of expenditures by 13 - 18 % is assumed. The share of these services on total expenditures should increase from 1.4 % in 2000 to 2.3 % in 2006. At the end of the prognosis period, the expenditures should amount to approximately 2.3 billion SKK.

In the field of *health care aids*, stagnation is expected. The share on the total expenditures should remain at the level of 2.5 %, with nominal growth rates of 6 - 8 % yearly. At the end of the prognosis period, the expenditures should be at the level of approximately 2.5 billion SKK. Certain risk is represented by the change of behaviour in the area of purchases or by the change of accounting system of purchases if the out-patient health care takes over some services of in-patient health care facilities.

In *health-resort care*, changes are not supposed - it should stay at the level of under 1 % from total expenditures, with yearly growth rates following the inflation rate.

For *other payments for health care*, stagnation is supposed with the decrease of their share on the total expenditures of health care system under 2 % - down to the level of 1.6 % in 2006.

The *expenditures on pharmaceuticals dispensed to out-patients* represent the second most important item of total expenditures. They amount to about 30 % of total expenditures of the Slovak health care system. Under the assumption of preserving the existing attitude to prices of delivered medicaments, an increase in the expenditures on medicaments is supposed only as a consequence of total development of price indices and demographic development. In the demographic development, two contrary factors function - the decreasing number of children and the increasing number of older workers. These two groups use the most of the health care provided. From the analysis of mentioned influences, the nominal development of 8 - 6 % growth with decreasing tendency follows. The total share of the expenditures on pharmaceuticals dispensed to out-patients should decrease moderately from 31 % in 2000 to 28 % in 2006, when the expenditures should amount to approximately 24 billion SKK.

The most important part of the expenditures of the health care is represented by the *in-patient health care*. It represents about 40 % of the total expenditures. The development of this item is mostly influenced by the development in hospitals, into expenditures of which the direct payments from the Ministry of health care were included as well. In other parts, real stagnation of expenditures financed from the system of health care insurance is expected. For the development in hospitals, the aforementioned trend of transferring services from in-patient to out-patient health care is important. The second important trend is represented by the indispensability of the decrease of fixed costs. For these reasons, an increase of expenditures on hospitals is expected under the growth rate of inflation. The total expenditures on in-patient health care should increase by 5 - 7 % yearly, and in 2006 they should amount to approximately 30 billion SKK. Their share on the total expenditures should decrease from 40 % in 2000 to 35 % in 2006.

Prognosis of deficit of health insurance companies

The existing difference between the receipts of health insurance companies and the expenditures of the health care system is figured in the Table 6.18. The future deficit will depend, besides the mentioned future expenditures, on the future receipts of health insurance companies which have an optional character. The individual scenarios of the development of payments to health insurance companies are described in the chapter 6.4. With these data, the scenarios of the deficit correspond.

In scenario S1, which represents the persistence of current system of payments to health insurance companies in the future, the deficit of the health care system would further increase. In 2006, it would amount to unsustainable 17.5 billion SKK (Table 6.20).

Table 6.20: Development of the deficit of health insurance companies, scenario S1, billion SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditures	64 119	68 828	74 135	80 632	86 990
revenues	52 281	55 801	60 035	64 643	69 509
deficit	-11 838	-13 027	-14 100	-15 989	-17 481

According to the **scenario S2** which includes the maintenance of payments to health insurance companies with a valorisation of the assessment basis, the deficit would increase more slowly than in scenario S1. In 2006, it would be at the level of 13.2 billion SKK (Table 6.21).

Table 6.21: Development of the deficit of health insurance companies, scenario S2, billion SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditures	64 119	68 828	74 135	80 632	86 990
revenues	52 281	56 817	62 120	67 790	73 747
deficit	-11 838	-12 011	-12 015	-12 842	-13 243

In the **scenario S3** which represents the decrease of unemployment rate by one percentage point (compared to the scenario S1), the deficit would increase compared to the scenario S1. In 2006, it would amount to 17 billion SKK (Table 6.22).

Table 6.22: Development of the deficit of health insurance companies, scenario S3, billion SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditures	64 119	68 828	74 135	80 632	86 990
revenues	52 672	56 238	60 535	65 153	70 106
deficit	-11 447	-12 590	-13 600	-15 479	-16 884

According to the **scenario S4** which incorporates the increased assessment basis for the policyholders of the state and the lowered premiums flowing into health insurance companies (lowered to the level of 11 %), the deficit would be the most favourable one. During the whole period of prognosis, it would be at the level of 4 - 5 billion SKK (Table 6.23). In 2006, it would amount to 5 billion SKK.

According to the **scenario S5** with the absence of the state participation, the deficit would attain similar values as in the scenario S2; however, it would slowly decrease in nominal

terms, from 14 billion SKK in 2002 to 13 billion SKK in 2006 (Table 6.24).

Table 6.23: Development of the deficit of health insurance companies, scenario S4, billion SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditures	64 119	68 828	74 135	80 632	86 990
revenues	59 534	64 323	70 007	76 036	82 376
deficit	-4 585	-4 505	-4 128	-4 596	-4 614

Table 6.24: Development of the deficit of health insurance companies, scenario S5, billion SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditures	64 119	68 828	74 135	80 632	86 990
revenues	49 941	54 704	60 586	66 966	73 650
deficit	-14 178	-14 124	-13 549	-13 666	-13 340

Prognosis of possible effects of lower loan of the World Bank

In the following paragraphs, let the loan of the World Bank fixed for the restructuring of the Slovak health care system at the level of 15 million USD (i.e. about 700 million SKK) be taken into account.

In the view of the value of this loan (less than 1 billion SKK) and the deficits between revenues and expenditures of health insurance companies regularly at the level of 10 billion SKK per annum, its use for clearing the debts can be considered ineffective. That is why the authors propose to use this loan for financing of such projects which would increase the effectiveness of the Slovak health care and by this, ceteris paribus, decrease the indebtedness and prevent falling into debt in the future. For example, three projects could be involved:

The aim of the first project would be to *increase the effectiveness of collecting premiums* into health insurance companies. A common system of collecting obligatory payments into health insurance companies, Social insurance company, etc. would be created. This or similar change would lead to increasing receipts from obligatory payments into health insurance companies by about 2 %.

The second project should be aimed at the *effectiveness of medicaments policy*. It is supposed that the expenditures on the medicaments could drop by 5 %.

The third project would be aimed at the *increase of effectiveness of hospitals*. As a measure the decrease of capacity of beds and increased rate of using the beds could be used. The expenses of hospitals could be lowered by 5 %.

It is assumed that these measures could be effective from 2003 onwards. The development of expenditures using the loan lower than 15 million USD for the projects - which would increase the collection of premiums and decrease the expenditures on medicaments and in-patient care - is in details indicated in the Table 6.25 and their structure in the Table 6.26.

Table 6.25: Expenditures of health care system in the Slovak Republic, lower loan, million SKK, current prices

	2003	2 004	2 005	2 006
Primary out-patient care total	8 100	9 100	10 600	12 000
of it dental care	2 750	2 900	3 100	3 300
Out-patient care specialised	5 700	6 500	7 500	8 500
Common curative and rehabilitative care	4 700	5 000	5 400	5 900
Transport health care service	1 300	1 500	1 700	2 000
Pharmaceuticals dispensed to out-patients	18 979	20 304	21 630	22 990
Health care aids	1 778	1 902	2 026	2 150
In-patient care total	24 127	25 484	27 220	28 690
Health-resort care	530	570	600	640
Other payments for health care	1 346	1 365	1 385	1 400
Total expenditures	66 560	71 725	78 061	84 270

The development of the deficit of health insurance companies depends on the scenarios of receipts of health insurance companies. The deficit, according to the individual scenarios, would be lower.

Table 6.26: Structure of expenditures of health care system in the Slovak Republic, lower loan, in %

	2003	2 004	2 005	2 006
Primary out-patient care total	12.2	12.7	13.6	14.2
of it dental care	4.1	4.0	4.0	3.9
Out-patient care specialised	8.6	9.1	9.6	10.1
Common curative and rehabilitative care	7.1	7.0	6.9	7.0
Transport health care service	2.0	2.1	2.2	2.4
Pharmaceuticals dispensed to out-patients	28.5	28.3	27.7	27.3
Health care aids	2.7	2.7	2.6	2.6
In-patient care total	36.2	35.5	34.9	34.0
Health-resort care	0.8	0.8	0.8	0.8
Other payments for health care	2.0	1.9	1.8	1.7
Total expenditures	100	100	100	100

In the **scenario S1** (Table 6.27), the existing state of assessment basis of policyholders of the state would not be changed, while the deficit of the system would increase further, though more slowly than without the lower loan. During the years of 2002 - 2004, the deficit would be constant at the level of about 10 billion SKK. After that it would begin to increase and in 2006 it would amount to 13 billion SKK.

Table 6.27: Development of the deficit of health insurance companies, scenario S1, lower loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditure	64 119	66 560	71 725	78 061	84 270
revenues	53 327	56 917	61 236	65 936	70 899
deficit	-10 793	-9 643	-10 490	-12 125	-13 371

According to the **scenario S2** (valorisation of assessment basis, Table 6.28), the deficit would fluctuate, from 2004 onwards it would increase - though more slightly than in the scenario S1. In 2006, it would amount to 9 billion SKK.

Table 6.28: Development of the deficit of health insurance companies, scenario S2, lower loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditure	64 119	66 560	71 725	78 061	84 270
revenues	53 327	57 953	63 362	69 146	75 222
deficit	-10 793	-8 606	-8 363	-8 915	-9 048

In the **scenario S3** (decreased unemployment rate by 1 percentage point, Table 6.29), the deficit would increase comparatively with the scenario S1. In 2003, it would amount to 9 billion SKK; however, after that it would increase and in 2006 it would amount to 13 billion SKK.

Table 6.29: Development of the deficit of health insurance companies, scenario S3, lower loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditure	64 119	66 560	71 725	78 061	84 270
revenues	53 725	57 363	61 746	66 456	71 508
deficit	-10 394	-9 197	-9 980	-11 605	-12 762

According to the **scenario S4** with the increase of assessment basis and the decrease of tax rates (Table 6.30), the deficit would develop most favourably compared to all other possibilities. After putting the projects into effect, the deficit would drop under 1 billion SKK and this value would be maintained throughout the whole period of prognosis.

Table 6.30: Development of the deficit of health insurance companies, scenario S4, lower loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditure	64 119	66 560	71 725	78 061	84 270
revenues	60 725	65 609	71 407	77 557	84 024
deficit	-3 394	-950	-318	-504	-246

In the **scenario S5** without participation of the state, the deficit of the system would float at the level of about 11 billion SKK per annum (Table 6.31).

Table 6.31: Development of the deficit of health insurance companies, scenario S5, lower loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenditure	64 119	66 560	71 725	78 061	84 270
revenues	49 941	54 704	60 586	66 966	73 650
deficit	-14 178	-11 856	-11 139	-11 095	-10 620

Prognosis of possible effects of higher loan of the World Bank

Let now the loan of the World Bank aimed at the support of restructuring the Slovak health care system at the level of *150 million USD* (i.e. about 7.5 billion SKK) be considered.

In the case of higher loan the progress in accordance with the lower loan is proposed. 10 % of the loan should be earmarked for the projects mentioned for the lower loan. The rest financial resources, i.e. less than 7 billion SKK, should be used for clearing the debt of the system of health care. As can be seen from the deficits of the system in the previous sub-chapter, the system alone will not be able to repay the loan. The loan, however, will enable the system to stabilise its portfolio when the long-term liabilities of this loan replace the short-term liabilities for due services and goods as the counterpart of long-term claims for unpaid premiums. In this way, the component of stability will be put into the system.

The second problem is the loss of the system as a whole. When the system is not profitable or generates only a gentle loss, similar clearings of debts have only a short-term effect and it is doubtful if this effect is positive. That is why it would be appropriate - in the case of continuing indebtedness of the system - to use a greater part of this loan for the projects supporting the increase of effectiveness of the system.

It is supposed that *2.5 billion SKK* of the loan should be used for the mentioned projects aimed at the effectiveness of the system, the particular projects being put into effect from 2003 onwards.

The first project would increase the *collection of premiums by 3.5 %*. The second project

aimed at the effectiveness of medicaments policy would decrease the expenditures *by further 2 %*, also together by 7 %. The third project focused on the increase of *effectiveness of hospitals*, would shift the certain part of their services on the out-patient health care. It is supposed that the costs of hospitals would decrease by 16 % and, as a consequence, the expenses of *primary out-patient care* would increase by 5 % and expenses of *specialised out-patient care* by 12 %. After paying for these projects, about 5 billion SKK from this loan should remain. In the view of the relatively small sum, i.e. *5 billion SKK*, in comparison with the total liabilities of the system at the level of 25 billion SKK, *paying the debts* could not happen fully. That is why it is proposed to use these resources at least for the part paying of liabilities of health insurance companies to the private subjects. It does not bring any direct multiplication effects, however the economic environment of these subjects will be healthier.

The total quantification of the effects of the projects can be found in the Tables 6.32 and 6.33.

Table 6.32: Expenditures of the health care system of the Slovak Republic, higher loan, million SKK, current prices

	2002	2003	2004	2005	2006
Primary out-patient care total	7200	8505	9555	11130	12600
of it dental care	2600	2750	2900	3100	3300
Out-patient care specialised	5000	6384	7280	8400	9520
Common curative and rehabilitative care	4500	4700	5000	5400	5900
Transport health care service	1100	1300	1500	1700	2000
Pharmaceuticals dispensed to out-patients	18582	18579	19877	21175	22506
Health care aids	1654	1778	1902	2026	2150
In-patient care total	24269	21334	22533	24068	25368
Health-resort care	488	530	570	600	640
Other payments for health care	1326	1346	1365	1385	1400
Total expenditures	64119	64455	69582	75884	82084

Table 6.33: Structure of the expenditures of the Slovak health care system, higher loan, in %

	2002	2003	2004	2005	2006
Primary out-patient care total	11.2	13.2	13.7	14.7	15.4
of it dental care	4.1	4.3	4.2	4.1	4.0
Out-patient care specialised	7.8	9.9	10.5	11.1	11.6
Common curative and rehabilitative care	7.0	7.3	7.2	7.1	7.2
Transport health care service	1.7	2.0	2.2	2.2	2.4
Pharmaceuticals dispensed to out-patients	29.0	28.8	28.6	27.9	27.4
Health care aids	2.6	2.8	2.7	2.7	2.6
In-patient care total	37.9	33.1	32.4	31.7	30.9
Health-resort care	0.8	0.8	0.8	0.8	0.8
Other payments for health care	2.1	2.1	2.0	1.8	1.7
Total expenditures	100.0	100.0	100.0	100.0	100.0

In the **scenario S1** (Table 6.34) the existing state of assessment basis for the policyholders of the state would not be changed and the deficit of the system would further increase after the introductory decrease in 2003. In 2006, it would amount to 10 billion SKK.

Table 6.34: Development of the deficit of health insurance companies, scenario S1, higher loan, billion SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenses	64 119	64 455	69 582	75 884	82 084
returns	54 111	57 754	62 136	66 906	71 942
deficit	-10 008	-6 701	-7 446	-8 978	-10 142

According to the **scenario S2** (valorisation of the assessment basis, Table 6.35), the deficit would float at the level of about 5 billion SKK during the whole period of prognosis.

Table 6.35: Development of the deficit of health insurance companies, scenario S2, higher loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenses	64 119	64 455	69 582	75 884	82 084
returns	54 111	58 806	64 294	70 163	76 328
deficit	-10 008	-5 650	-5 288	-5 721	-5 756

In the **scenario S3** (decreased unemployment rate by 1 percentage point, Table 6.36), the deficit would increase compared to the scenario S1. In 2003, it would amount to 6 billion SKK. Later, it would continue to increase and in 2006 it would amount to 10 billion SKK.

Table 6.36: Development of the deficit of health insurance companies, scenario S3, higher loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenses	64 119	64 455	69 582	75 884	82 084
returns	54 516	58 206	62 654	67 433	72 560
deficit	-9 604	-6 249	-6 928	-8 451	-9 524

Only according to the **scenario S4** with the increase of assessment basis and with the decrease of the tax rates (Table 6.37), it would be possible to manage the system evenly and, furthermore, to repay the collected liabilities. During the whole period of prognosis, the surplus would increase slowly from the level of 2 billion SKK in 2003 to 3 billion SKK in 2006. At the level of about 20 billion SKK of liabilities, after repaying the liabilities at the level of 5 billion SKK using the aforementioned loan, this surplus of the system would allow for repayment of these liabilities in a relatively short period of time - a period of about 10 years.

Table 6.37: Development of the deficit of health insurance companies, scenario S4, higher loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenses	64 119	64 455	69 582	75 884	82 084
returns	61 618	66 574	72 457	78 697	85 259
deficit	-2 501	2 119	2 875	2 813	3 175

In the **scenario S5** without the participation of the state, the deficit of the system would float between 8 and 10 billion SKK (Table 6.38).

Table 6.38: Development of the deficit of health insurance companies, scenario S5, higher loan, million SKK, current prices

	2 002	2 003	2 004	2 005	2 006
expenses	64 119	64 455	69 582	75 884	82 084
returns	49 941	54 704	60 586	66 966	73 650
deficit	-14 178	-9 751	-8 996	-8 918	-8 434

The described scenarios of expenses of health insurance companies show that the effects of particular alternative scenarios are very different and it is impossible to come to an unambiguous conclusion since all of them have their positive and negative features. In a process of selecting which scenario is chosen, it is necessary to take the choice of priorities and assessment of real possibilities into account.

6.6 Prognosis of receipts, expenses and deficit of health care in Slovak Republic

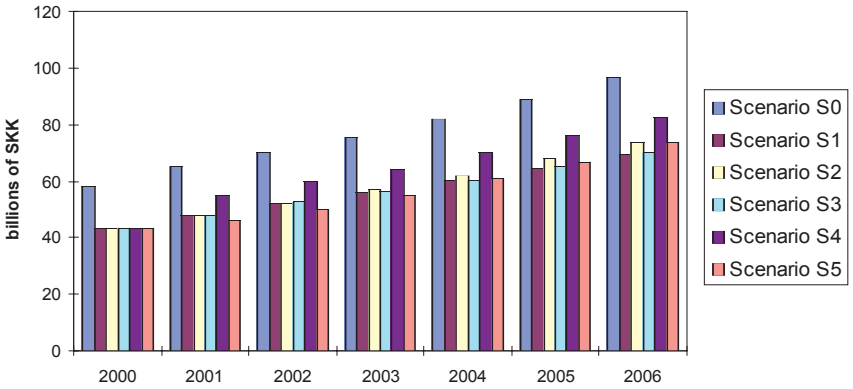
Table 6.39: Overview of scenarios of receipts of health insurance companies

	S0	S1	S2	S3	S4	S5
Characteristic	**Basic scenario**	**Maintenance of present state**	**Increase of assessment basis**	**Decrease of unemployment rate by 1 percentage point**	**Scenario with changed way of payments**	**Without payments of state**
Tax rate	0.14	0.14	0.14	0.14	0.11	0.21
Assessment basis						
Collections from employment	pre-tax wages and salaries	pre-tax wages and salaries	pre-tax wages and salaries	pre-tax wages and salaries	pre-tax wages and salaries	pre-tax wages and salaries
Payed by the state						
unprovided-for children	minimum wage	2700	valorisation	2700	minimum wage	state does not pay
pensioners	minimum wage	2700	valorisation	2700	minimum wage	state does not pay
registered unemployed persons not receiving the unemployment benefits	average nominal wage	2700	valorisation	2700	average nominal wage	state does not pay
others	minimum wage	2700	valorisation	2700	minimum wage	state does not pay
Payed by the National Institute of Labour	average nominal wage	2700	valorisation	2700	average nominal wage	state does not pay
Note			Valorisation of assessment basis of the scenario S1 based on expected inflation	As in scenario S1, only the expected unemployment rate is changed.		

The scenarios of *receipts of health insurance companies* - discussed in chapter 6.4 - are clearly characterised in the Table 6.39.

The receipts of health insurance companies, which were analysed numerically, are expressed by the Graph 6.12.

Graph 6.12: Receipts of health insurance companies



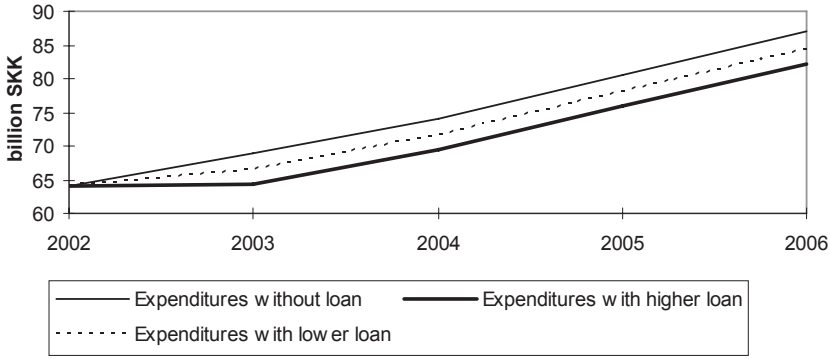
As follows from the graph, the highest receipts of health insurance companies are attained according to the reference (base) scenario S0, which - however - is not remunerative for the state budget. The difference between scenarios S1 and S2 decreases in time, which is the consequence of inflation by which in scenario S2 the assessment basis is gradually valorised. The scenario S4 represents constantly high receipts of health insurance companies. The scenario S5 (with dropping out of the state) represents the improving receipts of health insurance companies mainly at the end of the period of prognosis, when the revival of employment and also the increase of wages are expected.

Table 6.40: Prognosis of expenditures of health insurance companies, billion SKK, current prices

	2002	2003	2004	2005	2006
Expenditures without loan	64.119	68.828	74.135	80.632	86.990
Expenditures with higher loan	64.119	64.455	69.582	75.884	82.084
Expenditures with lower loan	64.119	66.560	71.725	78.061	84.270

The *expenditures of health insurance companies* and potential influence of loans of the World Bank on these expenditures were analysed in chapter 6.5. The results are summarised in the Table 6.40 and in the Graph 6.13. It can be seen that the loans, if they are used as supposed, will lower the expenditures of health insurance companies.

Graph 6.13: Expenditures of health insurance companies, billion SKK, current prices



The *final deficit* of receipts and expenses of health insurance companies depends on the combination of scenarios of receipts of health insurance companies (S1 to S5) and three scenarios of loan (without loan, lower loan of 15 million USD, higher loan of 150 million USD). Through combinations of these scenarios 15 possibilities of the development of deficit of health care arose, which were discussed in chapter 6.5. They are summarised in the tables 6.41 - 6.43 and clearly illustrated by the graphs 6.14 - 6.16.

Table 6.41: Prognosis of the deficit of health insurance companies, billion SKK, current prices

	2002	2003	2004	2005	2006
Scenario S1	-11.838	-13.027	-14.100	-15.989	-17.481
Scenario S2	-11.838	-12.011	-12.015	-12.842	-13.243
Scenario S3	-11.447	-12.590	-13.600	-15.479	-16.884
Scenario S4	-4.585	-4.505	-4.128	-4.596	-4.614
Scenario S5	-14.178	-14.124	-13.549	-13.666	-13.340

Graph 6.14: Deficit of health insurance companies, without loan

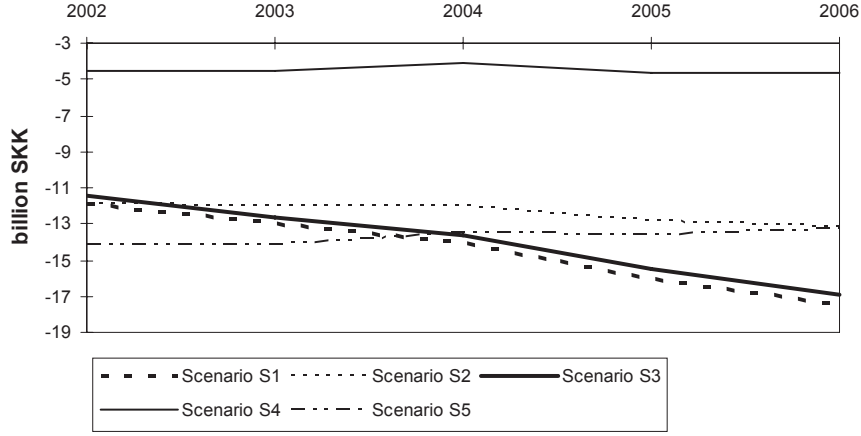


Table 6.42: Prognosis of the deficit of health insurance companies with lower loan, billion SKK, current prices

	2002	2003	2004	2005	2006
Scenario S1	-10.793	-9.643	-10.490	-12.125	-13.371
Scenario S2	-10.793	-8.606	-8.363	-8.915	-9.048
Scenario S3	-10.394	-9.197	-9.980	-11.605	-12.762
Scenario S4	-3.394	-0.950	-0.318	-0.504	-0.246
Scenario S5	-14.178	-11.856	-11.139	-11.095	-10.620

Graph 6.15: Deficit of health insurance companies with lower loan

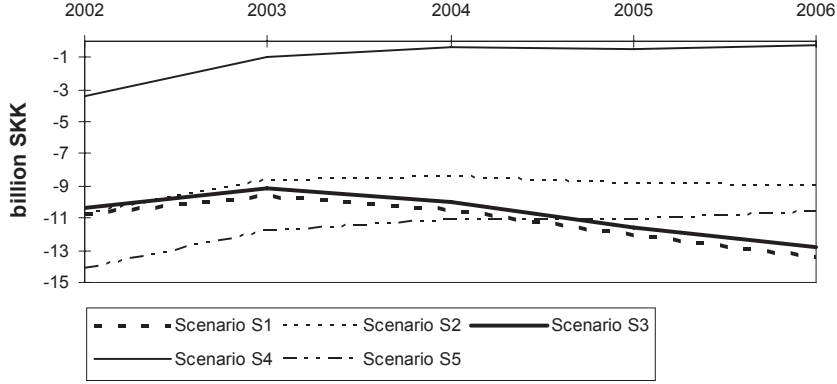
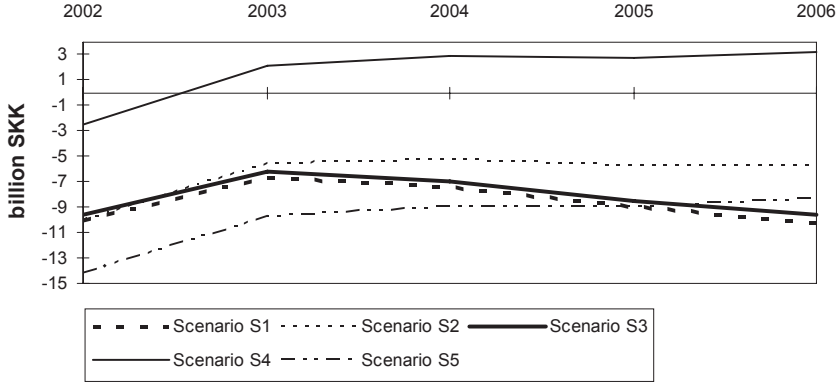


Table 6.43: Prognosis of the deficit of health insurance companies with higher loan, billion SKK, current prices

	2002	2003	2004	2005	2006
Scenario S1	-10.008	-6.701	-7.446	-8.978	-10.142
Scenario S2	-10.008	-5.650	-5.288	-5.721	-5.756
Scenario S3	-9.604	-6.249	-6.928	-8.451	-9.524
Scenario S4	-2.501	2.119	2.875	2.813	3.175
Scenario S5	-14.178	-9.751	-8.996	-8.918	-8.434

Graph 6.16: Deficit of health insurance companies with higher loan



As follows from the results, the only scenario by which surplus management of health insurance companies could be expected (which is indispensable for clearing of remaining debts) is the scenario S4 in combination with higher loan. On the other hand, the scenario S1 describing the present state again in the combination with higher loan seems to be unsustainable.

The scenarios S2 and S5 give similar results and in combination with deeper health care system reform as was supposed in the prognosis or with supplementary financing of the state could lead to a sustainable state of management of the health care.

7. Health care systems in the European Union

This part of the work was dedicated to mapping various health care financing systems functioning in the EU countries. Situation concerning this issue is very different across the EU member states and it differs from the Slovak reality mainly in the amount of health care provided within the statutory health care system. There were often found rather big differences in what is understood by health care, mainly in relation to Slovak health care and social system. This is why the whole social system of the EU member states was dealt with and was summarised in a uniform table scheme. In the case of Slovakia, it covers health insurance companies, Social insurance company, National Institute of Labour and the role of the state in the field of health care. The results of this work are presented in the Annex IV.

Simulation scenario based on the Netherlands example

This scenario is based on the assumptions of the base scenario as described above. The results of the scenario concerning Slovak health care system financed according to the Netherlands model are presented in the Annex III, Table 1. The simulation scenario calculations were based on the payment scheme valid in Netherlands.

Concerning employed policyholders, the Dutch health care system is financed by premiums that equal to 1.75 % of monthly salary. This part is paid by an employee. The employers pay 6.35 % of an employee's salary. Self-employed persons deliver the premiums equal to 6.1 % of their total revenues. The crucial difference rests in the premiums paid for people that are considered state-insured in Slovakia. There are no premiums paid for unprovided-for children in Netherlands. Retired people pay 8.1 % of their retirement pensions.

From the percentages stated above, it is obvious that the health care system incomes should be less in this scenario. If the Dutch health care financing system came into effect in Slovakia, total revenues would rise from 12.9 bill. SKK in 2001 to 20.5 bill. SKK in 2006. Almost a 10 % revenues growth rate (which would be higher than the inflation rates) would mean a 3 - 4 % real income growth.

However, the total amount of payments should decrease in comparison to the payments collected in Slovak financing system. According to this scenario, incomes of the health insurance companies would be 70 bill. SKK less in 2006 than in the reference scenario as described above. It is caused by lower insurance premium percentage rates and by the fact

that there are no state-insured citizens. According to the Dutch model, there are no transfers from the state to health insurance companies. Payments from employment would be 30 bill. SKK less.

Simulation scenario based on the Germany example

This scenario is also based on the assumptions of the base scenario as described above. The results of the scenario concerning Slovak health care system financed according to the Germany model are presented in the Annex III, Table 2. The calculations were based on the payment scheme valid in Germany.

Concerning employed policyholders, the German health care system is financed by basic premiums that equal 6.77 % of monthly salary. This part is paid by both an employee and an employer. Besides the basic premium, an additional premium of 0.85 % of monthly salary is introduced, paid again by both an employee and an employer. As follows, wage-based payment burden in Germany is the same for both an employee and an employer. Self-employed people deliver premiums that equal to 13.54 % of their total revenues. Similar to Netherlands, the payments for state-insured citizens are absent in German health care financing system. Retired persons pay 6.77 % of their retirement pensions.

The simulation calculations imply that employing the German financing system the Slovak health care system incomes would be higher compared to the Dutch system application, but still less compared to the reference scenario.

If the German health care financing system came into effect in Slovakia, total revenues would rise from 19.7 bill. SKK in 2001 to 31.5 bill. SKK in 2006. An annual 8 - 10 % growth rate (which would be higher than inflation) would mean a 3 - 4 % real income growth.

However, the total amount of payments should decrease in comparison to the payments collected in Slovak financing system. According to this scenario, incomes of health insurance companies in 2006 would be 60 bill. SKK less than in the reference scenario as described above. It is caused by lower insurance premium percentage rates and by the fact that there would be no state-insured citizens meaning no transfers from the state to health insurance companies.

8. Development of health care system in Great Britain - possible lessons for Slovakia

In the period immediately following the Second World War health care provision was reorganised in the United Kingdom. A National Health Service (NHS) was created through the drive of Aneurin Bevan, Minister of Health in the Labour Government. The purpose of the NHS was to provide health care for all free at the point of delivery. Bevan "believed that the best way to achieve this was to create a centralised, unitary system."(1)

Structural reforms of the 1990s

In 1990 the management system of the health services in Slovakia may have been closer to the system in the UK than it was to any other economically developed OECD country. This arose because the NHS structure up to 1990 was that of a central command system as set out below. A variety of systems which had been taken over in 1948 had been moulded into one system which was funded entirely by the state.

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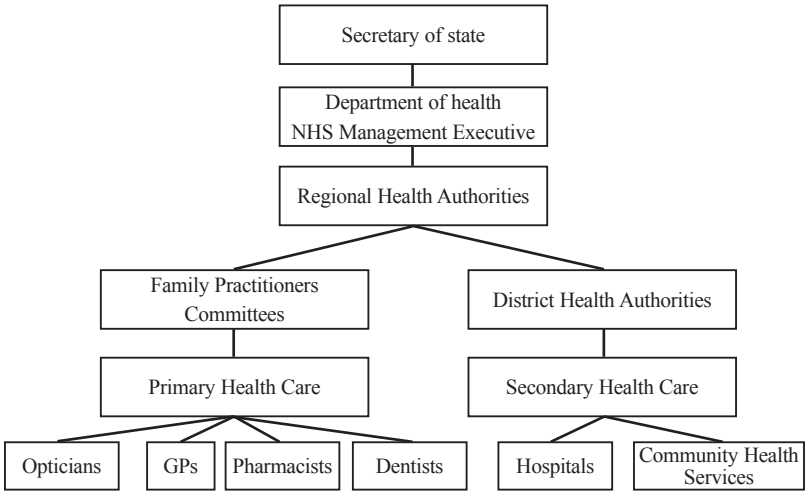
Figure 8.1: NHS structure in 1990 (details changed from 1948; this was command structure of a public monopoly)



That "central command" NHS was always a cause of controversy. It has retained popularity with people because there have been improvements on what had existed. However, it did not offer much choice to the patient - who accepted what they were given because they had no alternative and expectations were limited. As more people had more discretionary income they wished to exercise choice in all areas of their "demands" - including that for health care.

The system had positive achievements. Among these are:

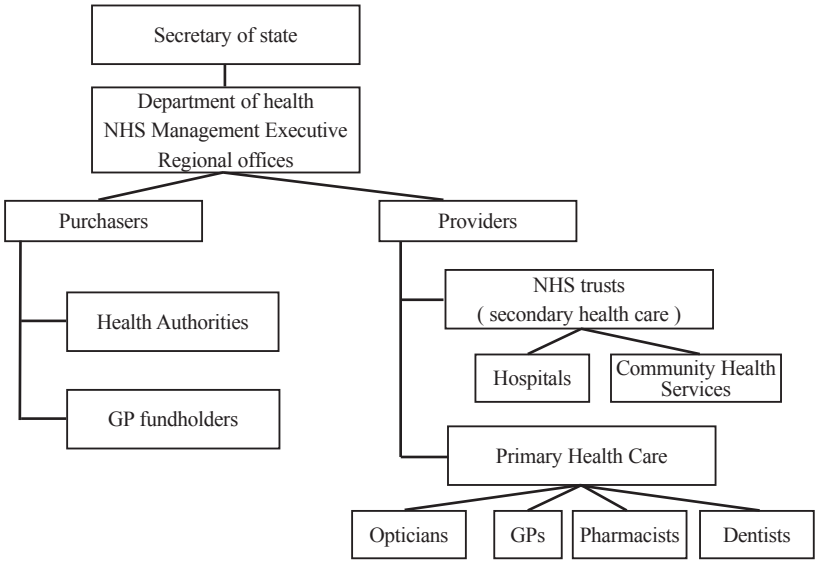
1. The NHS has been cheap by international standard. In 1990 health expenditure in the UK was 6.5 % GDP. By comparison the USA was spending 13 % GDP on health. In the US system the medical profession controlled the system. Their services were expensive. Those in need had problems acquiring health services.
2. Levels of health care in the UK compared well with other developed countries. For example, life expectancy of a male child born in the 1980s was 72.3 years while the European Union average was 72.2.
3. The NHS had avoided some of the problems of insurance based health care systems. Doctors are either salaried or have a contract. They do not get paid a fee for the service which they provide. GPs act as a filter to access to hospital care. GPs have been a means of controlling demand.

Conservative Governments of 1979 - 1997 were concerned with holding down costs in the NHS and related social services. They could see the future potential increases in demand which came from an ageing population; the use of an increasingly sophisticated technology and increasing expectations.

The government wished to control NHS costs by introducing more effective management into hospitals. This impinged on the autonomy - especially the clinical autonomy - of doctors. There was bound to be resistance, the government needed to raise the productivity of doctors and hospitals: to ensure that new more efficient treatments were introduced quickly when they became available and to ensure that the mix of treatments, operations and medicines was the best to meet the requirements of patients.

To achieve these objectives the government decided to introduce an element of "market forces" into the NHS by creating an "internal market". The health care service was divided into two groups - purchasers and providers. GPs could be fund-holders - that is they were allocated funds which they could use in the best possible way for the patients on their list. They and health authorities were purchasers who bought health care services for their patients from the providers - who were hospitals, pharmacists, other GPs, clinics, dentists and opticians. The structure of the NHS was changed to that below:

Figure 8.2: NHS structure to implement "internal market". Conservative reforms 1992 - 1997.



The reforms were aimed at given doctors the incentive to use their funds more effectively - with some benefit to their practice if it was well done. At first only larger group practices with more than 7 000 patients could have their own funds. By 1977 half the population was covered by GP fund-holder. GPs were both providers and purchasers. They had always provided primary care but they could now purchase non-emergency secondary health care services for their patients. Health authorities purchased all primary health care and emergency health care services. NHS hospitals were, of course, the main provider of secondary and emergency health care services.

The conservative government hoped that market disciplines and a more effective command structure would bring the medical profession under control and improve efficiency. The split between purchaser and provider was aimed both at creating a more business orientated attitude in managing the NHS and in forcing doctors to consider such issue as costs. This would put constraints on the clinical autonomy of the medical profession. The GP contract introduced made GPs more accountable to the government. Various incentive payments were made to encourage GPs to alter their way of working in directions which the government wished. These aimed at promoting childhood immunisation and cervical screening rates. It encouraged regular check ups for older patients. It put penalties on those doctors who failed to reduce excessive prescribing.

There were hopes that the internal market would force inefficient providers to become

more competitive to get more business and more revenue. NHS Trust should be encouraged to minimise costs - to get custom - and to adopt new efficient methods of treatment to be able to maintain their competitive advantage.

The innovators were correct in believing that there was resistance to change in a centrally managed organisation which employed around a million people. Devolution was tried by making hospitals NHS trusts - which were given autonomy in the use of resources but then given government targets to be achieved. Competition was seen as the spur to greater efficiency. Many of health staff are opposed to competition and claim that "co-operation" will achieve more. Without a spur there is neither incentive nor pressure to change methods and practices. The innovators failed to appreciate the additional administration which their "internal market" introduced into a system which was weighed down by paperwork already. These additional costs counterbalanced gains elsewhere. It is possible that in the future information technology (IT) may be sufficiently flexible to handle the complex "paper-trails" generated in past bureaucracies. By making information universally available it may speed up decision making and information retrieval - or it might produce even more paper!

A 1998 independent study by the Kings Fund (2) of the conservative governments attempts at reform concluded "perhaps the most striking conclusion is how little overall measurable change there seems to have been". The study said that the overall efficiency of the NHS "appeared to have increased. In its view no patients had suffered and fund-holder GP patients had gained. Patients' choice had not been increased. GP fund-holders "regard themselves as well-informed agents for their patients who did not need to systematically canvass patients' views." It was suggested that the "internal market" reforms would make NHS trusts more open. There is no evidence that the devolved trusts have become more accountable to their local populations. "There is no sense in which the decision making of either the health authorities or trusts has become more transparent to the public."

A labour government took office in May 1997. It indicated there would be a further reform of health care services. In December 1977 "The New NHS: Modern. Dependable" set out proposals for reorganisation in a "ten year vision for the modernisation of a health care system to be based on co-operation, not competition".

"There will be no return to the old centralised "command and control" NHS of the 1970s. Nor will there be a continuation of the divisive internal market of the 1990s. Instead there will be a "third way" of running the NHS. This will be based on partnership and driven by performance."

In the new system the "purchaser-provider split" of the internal market is retained. The GP fund-holder is abolished. All GPs have to join primary care groups (PCG). A PCG will

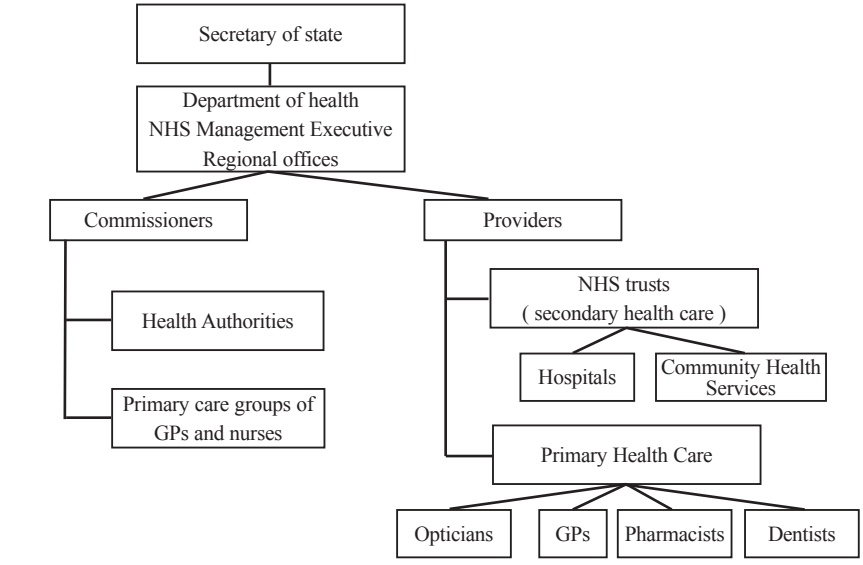
include up to 50 GPs and provide for around 100,000 of the population. It will be managed by the doctors and nurses in it. PCGs will have budgets and if they accrue surpluses they can use them on services for patients. Health authorities lose their purchasing role but will supervise the PCGs.

Additional reforms include annual instead of triennial contracts. There will be new performance indicators on effectiveness of processes and treatments. A variety of organisations aimed at improving efficiency are being introduced, among these are the National Institute for Clinical Excellence (NICE) and the Commission for Health Improvement (CHIMP).

Since 1997 the NHS has been continuously in the limelight. It has been battered by the press. The reform programme will take time to have effect. This is a major problem for a system which has always been something of a "political football". Until the last few weeks it would have been possible to make the case that the NHS had been providing a good level of care - and doing it relatively cheaply - so that most UK citizens received care which compared well with that in other countries.

"At its best the NHS is the envy of the world. But often it takes too long for patients to get treated. Quality is variable and NHS staff feels that too much of their time and effort is diverted from treating patients to pushing paper" (3).

Figure 8.3: NHS - labour 1997 structure



The UK NHS objective of providing health care for all free at the point of delivery is a desirable goal for any health care system. Slovakia needs to consider whether this is the objective of its health reform programme. A series of contradictory reforms in the UK in the 1990s has created instability, upheaval and low morale among staff and management in the NHS. Slovakia must try to achieve political consensus on how to organise and finance the health services. When it has carried through the reforms the new system needs to be given a period of perhaps ten years to judge how well it works. This does not mean that there should be no changes. It means that the reformed system has a means built in to assess performance and to make adjustments to achieve the agreed objectives. This could be an independent commission made up of Slovak businessmen from other sectors and foreign doctors. The commission's terms of reference should be to evaluate performance at regular intervals and to make recommendations for the improvement of health care provision.

Health service performance compared

Health services in Slovakia and the UK have had similar management styles up to the early 1990s. Both were command style managements. The financing of health care was through taxation. However control over staff in Slovakia was probably tighter than in the UK. There was employment in the UK outside the NHS. There was more competition for staff from competing sectors of the UK economy and abroad. If prospects appeared better in other sectors than in health - there would be a move away from that employment. Alternatively those in the health sector in the UK were free to move to other parts of the world to continue as doctors or nurses. Those leaving were replaced by many doctors from other countries such as Australia and India. With Slovakia's entry into the EU - after the transitional period there will be greater opportunity for doctors and nurses to work outside Slovakia. The attractiveness of pay in Western Europe may encourage an exodus of medical and nursing staff. This may raise the patient/doctor ratio in Slovakia which has risen already since 1990. UN figures suggest patients per doctor in Slovakia had risen from 336 in 1990 - 1994 to 381 in 1996 - 2000 (Encyclopaedia Britannica Year Book 2001).

In the last decade the balance of public opinion in the UK has been in favour of maintaining the existing health care system financed through taxation. Most people do not see why they "should pay twice" for their health care - having paid taxes and national insurance. The consensus is in favour of public sector provision. A recent Mori Poll showed 85 % in favour of a publicly funded health service paid for through taxation. There has been growth of a private sector in the UK. It accounts for 15 % of UK spending on health in 1999 - roughly

1 % of GNP.

In Slovakia there may be more scepticism about the state and its ability to manage complex organisations. The Slovak health care services are undergoing reform as is the UK system. There have been considerable efforts to promote "private health insurance" as a supplement to or alternative for what the state can provide. (e.g. 1/ Conference on Private Practice and Hospital Care organised by Dr Aneta Helesova of the Open Society Fund (11 - 14 October 1996); 2/ Workshop on Health Care Reform in Slovakia held at the Forum Hotel, Bratislava on 16 February 2001 and opened by Roman Kováč, Minister of Health of the Slovak Republic). Two problems have to be faced in the context of private health care and related health insurance. Firstly there is no tradition of private health care for most citizens in Slovakia. Piešťany functions like a private sector establishment but is publicly funded. It could widen its markets and take in more foreign customers. Secondly, the private sector flourishes where citizens have considerable discretionary income (income over that which is required to lead a comfortable existence). Individuals begin to treat cosmetic aspects of health like other marketed products. Few Slovak citizens have much discretionary income. Therefore as individuals they are not likely to be buyers of private health care unless there are inducements - such as tax relief. Private health insurance might be introduced through firms insuring workers to reduce time lost through illness or as part of a pay settlement. This has been the main cause of expansion of private health in the UK.

One way to judge the efficiency of health care service provision is to compare a range of vital statistics. There is an assumption that a relationship exists between life expectancy and the quality of the health services which are provided. Doctors and hospitals are only part of the picture. Improvements in health over the past hundred years have come from better water supplies, drainage, housing and living conditions. The pharmaceutical industry has provided more ways of treatment. Health care services have more means at their disposal than at in the past. New knowledge is brought, put to use and research encouraged. The efficient use of available resources will ensure the benefits are maximised.

Two sets of comparisons are set out below. The first set relate to some inputs and outputs of the Slovak and UK health care services. The statistics are extracted from WHO sources modified by the Encyclopaedia Britannica. The second set makes some comparisons between the UK, Slovakia and its neighbours.

There are many more doctors and beds available relative to population in Slovakia than in the UK. Bed utilisation in Slovakia was 73 % in the early 1990. In the UK it has been 85 %. These are crude comparisons. They do not consider the equipment available to doctors and nurses to carry out their tasks. Between 1994 and 2000 life expectancy rose in Slovakia for

Table 8.1: Health care system inputs and outputs, Slovakia and UK - some comparisons

Slovakia

INPUTS			**OUTPUTS**		
Doctors	**15 767**	**341**	**Life expectancy**	Male	66.6
Hospital beds	**62 818**	**85**		Female	75.4
Nurses	**n.a.**	**n.a.**	**Infant mortality**		12.6
Dentists	**2 236**	**2 370**	**Birth rate**		14
	*		**Death rate**		10
			Cause of deaths per 100 000		
			Circulatory diseases		525
			Respiratory diseases		65
			Malignant neoplasms, cancers		201
			Accidents, violence		65
			Digestive system diseases		43
			Endocrine disorders		13

United Kingdom

INPUTS			**OUTPUTS**		
Doctors	92 474	629	**Life expectancy**	**Male**	**73.2**
Hospital beds	283 814	205		Female	78.6
Nurses	309 000	190	**Infant mortality**		6
Dentists	17 472	3 370	**Birth rate**		12.9
	*		**Death rate**		10.7
			Cause of deaths per 100 000		
			Circulatory diseases		507
			Respiratory diseases		175
			Malignant neoplasms, cancers		278
			Accidents, violence		n.a.
			Digestive system diseases		34
			Endocrine disorders		15

** population per doctor, bed, nurse, dentist*

men to 69.4 years and for women to 77.1 years. At the same time there were rises in the UK for men to 74.4 years and for women to 79.7 years.

Life expectancy for men is five years more in the UK than in Slovakia. For UK women life expectancy is 30 months more than for their Slovak counterparts. The quality of life for older people and the quality of the services provided by the hospitals and other health related services is important. Services in Slovakia have twice as many doctors and hospital beds per 100 000 population as there are in the UK. The UK has better life expectancy and infant mortality rates than Slovakia. In the "causes of death" categories variations may be attributed to environmental factors. Slovakia's population is 56 % urban whereas 90 % of the UK

population live in cities. Rural areas may have less life threatening pollution.

The one category in which the UK system performs badly compared with the Slovak one is deaths from cancer (neoplasms). In 1994 UK deaths were 280 per 100 000 compared with 200 in Slovakia. By 1999 - 2000 263 deaths in the UK compared with 206 in Slovakia - a slight relative improvement in UK figures.

The earlier a cancer is treated the greater the chances of successful treatment. Waiting lists for serious operations have grown in the UK in the 1990s. Waiting lists arise through growing demand and relative shortage of doctors and other staff. The longer the delay in treating cancer the worse becomes the prognosis. An alternative explanation is that if your population is living longer individuals are more likely to develop cancers. The two factors together may explain why UK figures for deaths from cancer are higher than in Central Europe.

Slovakia's GNP per head is comparable to that of her neighbours in Central Europe. It is low compared with the UK. Life expectancy and related health indicators are similar in Slovakia, Hungary, Poland and the Czech Republic.

Table 8.2: Comparisons of Slovakia and its neighbours

		Country	Czech Republic	Hungary	Poland	Slovak Republic	United Kingdom
Life	Male	Years	77	75	77	77	80
expectancy	Female	Years	70	67	68	69	75
Infant mortality		Per 1000 births, 1990 – 1999	6	10	15	11	7
Total fertility rate		Births per females, 1990 – 1999	1.2	1.4	1.5	1.4	1.7
Sex ratio		Females per 100 males, 1999	105	109	106	105	104
GDP		Mill. USD, 1997	52 038	45 725	135 323	19 452	1283 335
GDP per capita		USD, 1997	5 052	4 502	3 505	3 621	21 921
Urban population		%, 1990 – 1999	75	63	64	57	89
Unemployment rate		%, 1999	8.1 (1)	9.5 (2)	11.6 (3)	11.6 (2)	4.4 (1)

Note: (1) May 1999, (2) 1997, (3) June 1999

The "health characteristics" of the four Visegrad countries are similar. Income per head is comparable and markedly less than in the UK. That difference would be reduced if purchasing power parity were used for comparisons.

The similarities are not surprising since all four have developed within the same framework up to 1990. Inertia in systems resists change. Working practices did not encourage

Table 8.3: Health comparisons of UK and Visegrad countries

	Country	Czech Republic	Hungary	Poland	Slovak Republic	United Kingdom
Patients per	doctor	272	280	349	341	629
	bed	79	104	180	85	205
Cause of death per 100 000						
disease of circulatory system		650	676	513	525	507
cancers		271	317	201	201	278
GDP per capita, USD, 1997		5 052	4 502	3 505	3 621	21 921

1994 figures derived from WHO, modified by Encyclopaedia Britannica 1996 - 2000

the "professionals" to improve services to patients. In "low income" economies professional status is more important than in "purer" market economies. There was manpower overcapacity in the health systems - and that is still there.

By comparison the UK health system has always been under pressure to keep down its costs. A labour government introduced charges for prescriptions, spectacles and dental treatment in 1951 to hold back the increasing costs. Conservative governments always believed that the health care services were an inefficient monopoly which it tried to control. In a more market orientated system it was difficult to keep staff if pay restraints were too effective - doctors and nurses could go abroad. If salaries were not comparable with other occupations staff would leave and numbers in training would fall. However, it can be argued that a system under strain will be more innovative than one which does not feel any pressure to change and adapt. It seeks new ways of solving management and technical problems. To the extent that it is successful the users of the service will be better served than they would have been.

Staffing and "available bed" figures show Slovakia is "well off" compared with the UK. Undoubtedly, the UK health system is overstretched at the moment. "It is creaking at the margin." The waiting lists referred to above reflect the strain upon the entire system. This arises from a number of factors - some long-term and some short-term arising out of other reforms which are taking place. Firstly, the UK has failed over a long period to train sufficient doctors and nurses within its own medical and nursing schools. It has relied upon an inflow of doctors from other parts of the world to make up the shortfall. Secondly, the more complex and technological the health services become the more retraining has to be done by doctors and nurses. This requires a bigger total staff to keep the same number in direct contact with residents at any time. Thirdly, the introduction for all workers of more statutory holidays and family friendly policies are reducing the hours of work - requiring more staff to cover what is to be done. For health care 24 hour cover is necessary so that the solutions open to some

occupations are not available here. Fourth, the team work necessary to carry out complex operations requires much organisation and planning. If any one in a team is unavailable it may be difficult to find someone to stand in - and time is unavoidably wasted. Fifth, junior doctors "gained experience" and provided hospitals with a supply of "cheap labour". They worked excessive hours and took the pressure off the consultants. This system has been changed after a long campaign. The hours that used to be provided by that means now require additional doctors. Sixth, the training of nurses in the UK had traditionally been "on the ward" and interspersed with lectures. Nurses in training were a useful aid to staffing. The Royal College of Nursing campaigned for nursing qualifications to be a degree course. One of the consequences of the introduction of this system is that nurses in training spend relatively little time on the wards in hospital.

However, informed opinion suggests that the manpower available produced a high work rate. That view is supported by the fact that the UK achieved levels of performance, judged by accepted standards, which has delivered a service to its users comparable with the best at a significantly lower proportion of GNP. Even when private sector spending is taken into account the GNP total is lower than that of comparable countries. This is an achievement - not something about which the government or the NHS should be apologising.

Table 7.4: Percentage of GNP spent on health services

Country	Public funds	Private funds	Total	Health expenditure
	% GNP	% GNP	% GNP	Łper capita
France	6.80	2.80	9.6	1 395
Germany	8.20	2.30	10.5	1 666
Italy	5.75	1.35	7.1	
Japan	5.75	1.35	7.1	
USA	6.40	7.50	13.9	2 455
UK	5.80	1.10	6.9	907
EU			8.7	

"In financial terms, the NHS is the most efficient health care system in the developed world." (5) It had kept down its costs because the conservative governments of Mrs Thatcher had encouraged a private sector which brought a factor of competition into the provision of health care. A programme of incremental changes tried to modify the way in which the system worked. The power of vested interests - such as the trade unions and the consultants was weakened. The labour government in 1977 benefited from the constraints which had held down health service costs - and continued the same methods of control until recently. There appears to be a sharp change of policy as the end of 2001 is reached. Why? The labour government pledged when elected in 1997 that it would reduce waiting list for hospital

treatment. It has found the problem much more difficult than it had anticipated. It has come to realise that the staffing levels of the NHS must be raised if it is to have the capacity to meet increasing demands on it from an ageing population, greater public expectations from the service, the problem of increasing litigation as members of the public adopt a more "Americanised" approach to the quality of and mistakes by the service.

In many OECD countries there has been a rapid growth in health expenditures in the last twenty years. This has led to upgrading of health services in Europe. In specialist areas hospitals are newer and look more attractive than older UK ones. They may provide better services than in the UK - especially if you can pay. Commentators with "an axe to grind" may not compare like with like. The UK has lagged in investment. This has affected introduction of new technology. European countries have availed themselves of private sector funds to speed up improvements.

The Times writes "survival rates for serious diseases such as breast cancer are poor. A British woman with heart disease is four times more likely to die than a comparable person in France."(6) This melodramatic presentation must be read alongside with "the French authorities, alarmed at the wastefulness of this (their) system, are examining ways of moving towards a British funding model". (7) The German Health Ministry has introduced Health Care Reform 2000. "This lays the groundwork for utilizing the funds available in the future in a reasonable manner. In the past, too much money has been wasted, too much spent on unnecessary benefits and too many treatments carried out without results. Advantage is now finally being taken of the many possibilities for achieving greater economies." (8)

Table 8.5: Growth in health expenditures, as % of GNP, 1980 - 1995

Country		France	Germany	Italy	USA	UK
Public financed	1980	6.0	7.0	5.6	3.9	5.0
	1995	7.3	8.1	5.4	6.3	5.8
Increase from 1980 to 1995		22 %	16 %	-4 %	62 %	16 %
Private financed	1980	1.6	1.8	1.4	5.2	0.6
	1995	2.5	2.3	2.3	7.3	1.1
Increase from 1980 to 1995		56 %	28 %	64 %	40 %	83 %
Total	1980	7.6	8.8	7.0	9.1	5.6
	1995	9.8	10.4	7.7	13.6	6.9
Increase from 1980 to 1995		29 %	18 %	10 %	49 %	23 %
% of total private financed	1980	21 %	20 %	20 %	57 %	11 %
	1995	26 %	22 %	30 %	54 %	16 %

Source: OECD

Table 8.5 shows that there was a significant increase in the proportion of GNP spent on health care in this sample of OECD countries. In each case the economy has been growing annually-so that % increases in real and monetary terms has been significant. France has increased its total spending on health by 29 % with the private contribution going up even more rapidly. In Italy a 30 % of spending on health is by the private sector. This has kept the total growing even though public spending has been held in check. In the USA there has been a 60 % increase in the public sector spending share of the GDP alongside a 40 % increase in the private sector contribution. This latter reflects the large discretionary incomes of "rich" America.

What is public and what is private expenditure in the health context? In most EU countries a large part of health costs is covered by health insurance schemes. "Nine out of ten people in France pay a proportion of their salary, typically 17 %, into a social fund for health care. The rest (1 in 10) are covered by a government fund." (9) In Germany a similar system exists. "Some 90 % of the population - approximately 72 million citizens - are covered by statutory health insurance. As a result, comprehensive health care of the population is guaranteed." "The statutory health care insurance finances its expenditure from the contributions paid up by the insured members. The contribution each member has to pay for health insurance cover is based on his or her financial capacity. Contributions are calculated as a percentage of the individual's wage or salary." (10) Since January 2000 an additional contribution has been introduced - long term care insurance. "It comprises both - statutory long-term care insurance (as a new and independent branch of the social insurance) and private compulsory care insurance. The expenditure on statutory long-term care insurance is financed by means of contributions which are paid equally by employers and insured employees. The current contribution rate is 1.7 % of the income on which contributions are due." (11) Although these payments are compulsory they are made to insurance organisations. These negotiate terms with the hospitals - and decide whether someone should be given treatment - and at what cost. Because it is handled by insurance companies and not the state it is not treated as a tax - even though it is compulsory and related to ability to pay.

In the UK there are no compulsory health insurances of a similar kind. Taxes and national insurance contributions are collected by the Inland Revenue. There is discussion of insurance payment as a way to fund improvements in the health services. It tends to ignore that in the EU such payments are compulsory - like a tax. To encourage health insurance conservative governments gave tax concessions to those "taking out private health insurance". One of the first actions of the labour government in office in 1997 was to abolish this and concessions on life assurance. The government saved ?500m per annum in tax. The present government

does not wish to encourage a private sector in health provision. Its actions rule out following the route of France or Germany.

After the Second World War the health care services in Western continental Europe did not have a "root and branch" reorganisation as happened in the UK. Management of hospitals remained under various organisation - local authorities, voluntary organisations, charitable organisations - as had been the case in the UK before the war. The result has been that governments funded health care alongside existing systems of payment. They were purchasers of services from non-governmental suppliers. Therefore a form of market existed and developed. Government was not directly involved in managing supplier institutions. There was competition between suppliers to get more orders from the purchasers. When negotiating terms the central government was powerful in relation to any individual supplier. Also its political policies were not at stake with every negotiation.

In the UK a monopoly was created - with inevitable problems. A monopoly supplier of a service will exercise its monopoly power. It employs around 1 million people. In every part of the country it is well represented. Those who seek to change the existing system will face massive inertia. This is so at present when managers are blamed for all the ills of the NHS - at least partly because they are trying to make it operate more efficiently. What they do affects all levels of employees - all of whom will see management as the cause of every upset to their world. A problem for the NHS is to find how to bring genuine competition into the system so that it operates efficiently. The Thatcher government introduced competition for supplying services to hospital (e.g. cleaning and catering). It encouraged a private sector to provide care, nursing homes and residential homes as well as hospitals. It encouraged health insurance. It would have liked to see hospitals concentrate on acute cases. The private sector could look after the chronic cases with state support at less cost than the state. In the 1990s the internal market was created to try to carry the process further - but it was too complex. In 1993 decisions on entry into private sector homes was put in the hands of local authorities. They control the funding of publicly funded patients; they carry out the inspection of the homes; they also have homes which they run themselves which until now have not been subject to inspection. The long term result is that whatever elements of competition developed they have been resisted and are being "squeezed out".

Slovakia's government should not assume that a bigger proportion of GNP spent on health care automatically means better provision. For many in the USA know that it does not. Everything depends on three things. Who gets access to the services which are available? How effectively are existing health resources used? How efficient is the means of raising the funds required for the service? It is interesting to investigate the way the UK answers these

three questions.

Everyone should get access to health services on the grounds of equity. However, demand for a free and wanted service is infinite and resources are limited. Therefore the system seeks to solve the problem by creating queues and prioritising. That approach works as long as the customers are patient. It is put under stress when the users will not accept the decisions of the "rationing" administrators / managers.

The UK system has matched that of comparable countries at lower costs. This means its management has with fewer resources done as well as similar systems. Its manpower problems have been exacerbated recently by the factors mentioned above. The training of staff and the capital investment programmes have been sacrificed whenever there has been a crisis. This has had adverse long-term effects.

The present labour government has affirmed on November 27, 2001 its "commitment to a publicly funded health care service". Gordon Brown, the Chancellor of the Exchequer, pledged to "significantly increase investment in the NHS. In future years Britain will face a tough decision over the long-term future of the NHS, which had suffered staff shortages and crumbling infrastructure amid ever greater patient demands." The Prime Minister asked himself "How do we get those extra resources? By payments out of general taxation, or specific payments through social insurance or by making people pay directly for their health care. We believe in the first." (12)This is a clear commitment to funding the UK health services through taxation. How will control be exercised to ensure that funds are not squandered?

The Slovak health services have a sufficient flow of new doctors and nurses being trained. It may lose more of those who train abroad in the future than it has done in the past. Doctors and nurses who have good capacity in foreign languages will be the ones who find it easiest to get work outside Slovakia. This should not present a problem for the Slovak health services because there is "slack" in the system.

It is essential that the working practices of doctors be reviewed to increase their workloads. This will create "surplus" staff - and it might be considered that teams of doctors and nurses be contracted to international aid organisations or to international companies to reduce the "burden" on national health costs. Medical skills are in short supply in many countries. If means of payment can be found the host country benefits with better medicine - and Slovakia by savings and perhaps net income from the contract.

A review of the 111 hospitals and property related to them needs to be made. There may be assets in excess of requirements which could be sold. Funds realised from such sales

would be available to provide up-to-date equipment. Slovakia must maintain its good performance relative to its immediate neighbours.

A review of the location of resources at present could bring improvements in their use. The system has grown up in a period when there was less mobility than there is today. Also there was less specialised treatment available. Today it is essential to have units which can provide the very sophisticated treatment processes which may allow the cure of the previously incurable. Such units require specialised staff and training. Such facilities can be provided in only a few centres. Therefore the users must become used to be taken away from their locality when this is required for effective treatment. Health care services are long past the time when a local hospital could supply everything. The user clients - the total population must be educated into accepting that if they want high quality treatment it can be supplied only in a few special centres appropriately staffed.

At the other end of the hospital admissions spectrum is the need to consider where day care clinics can provide for many patients who in the past spent time occupying hospital beds. Minor operations and other treatments are now being carried out in the primary care system in the UK.

Teams doing medical research in Slovakia might benefit from closer co-operation with the Visegrad countries. Teams from across these countries could pool resources and make better use of what financial support is available. It is probable that decision making on research should alter the balance in favour of applied problem solving research. Pay-back periods may be estimated in judging with what to go ahead. Benefits to the economies - and to the end users of services may arise more quickly. This will provide the means to finance and the incentive to go ahead with more research projects.

Economic considerations

The NHS is a state monopoly employing roughly a million people. Efforts made by conservative governments to introduce competition have had very limited effect. The inertia within the system resists change in methods of operation. The same will be the case in the Slovak system. It is essential that managers are put in place to introduce methods of increasing the workloads that are regarded as the norms for the medical profession. This is difficult to achieve because of the status of members of the medical profession - and because of their position in the existing power structure. There have been gains in the UK system from the open tendering for a range of services which were supplied previously by workers on the staff - many of whom were underemployed.

There are several weaknesses in both the NHS and the social services operated by local authorities. Firstly, guidelines from above are frustrated by actions at the ground level. Guidelines will be interpreted to maintain existing methods as far as possible. Unless the Minister is very determined and very effective he will have great difficulty in putting through policies which are not to the liking of those implementing them. Secondly, when there are pay negotiations - and in the UK the national Pay Review body makes its recommendations - most of the people on "all sides of the negotiating table" are on the same side. They are all public servants being paid through the same system. All have an interest in "putting pay up" rather than holding it down. The implicit assumption is an inflationary one - that the government will always come in with more money to fund deficits when these inevitably arise. Third, up to the present time the public sector institutions have been both competing with and inspecting the limited private sector. The NHS has inspected private hospitals and nursing homes while being subject to no inspection itself. Some NHS authorities lay down staffing requirements which make it impossible to create a viable undertaking. For existing nursing homes they step up demands for changes in provision without consideration of funding. Local authorities do likewise with registration and inspection of residential homes. In 2002 the inspection system will for the first time be independent - and apply to both the public and the private sector. This is a belated application of equity to all parties involved in the provision of health care support.

"The NHS Plan - A Plan for Investment - A Plan for Reform" published in 2000 states that "yet despite its achievements, the NHS has failed to keep pace with changes in our society. Too often patients have to wait too long. There are unacceptable variations in standards across the country. What patients receive depends too much on where they live and the NHS has yet to fulfil the aspiration to provide a truly national service. Constraints on funding mean that the staff often works under great pressure and lack of time and resources needed to offer the best possible service." (13)

While recognising some weaknesses it fails to recognise that the monopoly characteristic is the cause of the results. This will apply also in Slovakia. There will be resistance to attempts to increase workloads on doctors. In the Slovak situation where there is a much bigger supply of manpower in relation to population than in the UK - the government must consider whether over time it should encourage less people to go into the medical profession - and more into other professions. It can supply the health needs of the Slovak population with a smaller workforce.

The NHS Plan (2000) reads like a wish list - of all the additional staff which it intends to have in place by 2005 - 2006. On one aspect of the health care services it has suggested a long

overdue improvement. It proposes that the social services of local authorities - responsible for home nursing and a range of domiciliary care should work more closely with the NHS than it has in the past. This should ensure that there is closer co-operation between the authorities responsible for the care of people when they are in hospital and when they are outside. This has been a serious weakness in the system of care. Its effectiveness will depend upon how those working in the two systems co-operate to meet the needs of the patients.

Demands for a free service are infinite. This may explain the continuous growth in the demand for health care services in the UK. Some charges have been introduced - for subscriptions, dentistry, ophthalmic services. However, payments are made by those in employment. Young, aged and unemployed are exempt from paying for prescriptions. Some advocate that there should be a wider range of charges to "restrict" demand. The supporters of health insurance suggest that this will create a more responsible attitude on the part individuals. However, it is the insurance companies which determine the terms on which an individual has treatment. These terms will be laid down in the contract between insurer and supplier. Therefore, any health care system will have to decide what its priorities are. It must ensure that it always has sufficient services available to meet these. There will always be "discretionary areas". If there is "spare capacity" at any time this can be used to meet discretionary treatments. If there is always spare or idle capacity in a system - whether it be doctors, nurses or beds - a review of the allocation to health services as opposed to other elements of the budget should be made.

The UK government has in the last year been promising - and to an extent providing the first trace - of a massive increase in spending on the health care sector. However, it is promising to raise staffing levels significantly over the 2000 - 2005 period. It is proposing to increase the number of doctors by 10 % net in five years and promote many more to be consultants. With nurses, an increase of 20 000 is proposed - which is about 8 % net. This is at a time when the existing workforce is ageing and there are large-scale retirements of doctors and nurses expected.

While the government is signalling its intention to expand the workforce it is questionable whether a policy of highly publicised spending will achieve that objective. It takes six years to train a doctor and three to four years to train a nurse. There are many more alternative jobs which people may take today compared with the past. There is a much smaller pool of young people from whom to choose. Therefore even with many more people in training there is a need to replace the large numbers likely to retire. Money pumped into health care may lead to big increases in the pay of health workers without any significant increase in their numbers.

To the extent that the NHS planners are hoping to make good some of the gap by

encouraging nurses to do many of the things which doctors do at present there will be a need for even more nurses - as their role is expanded. There is a need for hospital assistants to take on the work of caring directly for the patient. There is need for a massive increase in the provision and training of "care assistants".

The grouping of GPs into "Group Practices" will provide a better service to the public. It will not be dependent upon the commitment of a single individual who cannot always be available. It will allow doctors to pool resources and to employ staff - both medical and clerical. More GPs will become paid employees of the local NHS Area Authority. Group Practices will give more stability to provision of primary care.

Technology is allowing many more things to be done to improve and maintain health than in the past. Research is increasing the number of things that doctors can do. Increased expectations of the general public are imposing demands on the health care system. These pressures will affect Slovakia in the future. The media in the UK tend to take up campaigns for health improvement or for "rectifying mistakes" in the health system. Attacks on the health service may affect the morale of staff immensely. The demand for compensation is adding to the costs of running hospitals - and may lead to doctors seeking to avoid risks when deciding on operations.

There are additional costs in the UK system arising from having to provide special support for services to people from a wide range of ethnic groups. A multi-racial society has more complex interpersonal problems to solve - and these add to the costs of the service.

Comparing health systems is difficult. Only the users know what a health service is like - and usually they are in no position to compare it with another country. Visitors to a health service are likely to "cherry pick". They will see what interest them. They will not see the whole. All health care services will have their "high flying" institutions. Some will have specialists in a particular health area for which they may be very well known. In the UK the National Reference Cost Index is used for setting targets for NHS providers. In the last two years it has ranked NHS trusts on the basis of their performance. The index showed that for comparable service the lowest cost NHS trust is around 37 % below the average and the highest cost is around 74 % above the average. What this means is that costs of carrying out similar work can be twice as high in some NHS hospitals as in others.

Methods used in NHS to improve use of resources

The NHS Plan presents a need for reform because "the NHS is a 1940s system operating

in a 21st century world". (14) It says "The NHS has been at the centre of a range of pioneering medical and technological breakthroughs. NHS doctors developed the technique on which the modern approach to hip replacement was based. Cataract surgery is an NHS innovation. Hospitals like Papworth, Great Ormond Street, the Freeman Hospital in Newcastle, Addenbrooke's (Cambridge), St James' Leeds and the Royal Marsden are internationally renowned and respected. Today the NHS is still home to international pioneers in the fields of vaccine development, imaging and gene therapy and many other fields of endeavour. The British system of primary care is envied and copied throughout the world." (15)

The NHS enunciated the following core principles to guide its policy. These are worthy of consideration by any health service. These principles are:

1. It will provide a universal service for all based on clinical need, not ability to pay.
2. It will provide a comprehensive range of services.
3. It will shape its services around the needs and preferences of the individual patients, their families and their carers.
4. It will respond to the different needs of the different populations.
5. It will work to improve quality services and to minimise errors.
6. It will support its staff.
7. Public funds for health care will be devoted solely to NHS patients.
8. The NHS will work with others to ensure a seamless service for patients.
9. The NHS will help to keep people healthy and work to reduce health inequalities.
10. The NHS will respect the confidentiality of individual patients and provide open access to information about services, treatment and performance.

The third principle is the most difficult one. Obviously a health service seeks to deal with the needs of the patients. It can respond to preferences in a general way by listening and taking into account. The objective is to emphasise that it is the patient who is important. However, patients must be co-operative with the system to allow it to function efficiently. If a code of practice is produced for doctors and nurses there should also be a code for patients and relatives as to what "reasonable behaviour" and "reasonable requests" are.

The fourth principle emphasises cultural differences. The emphasis should be on treatment of the individual whoever he or she is.

Principle seven is a response to the objectors to a private sector having private (paying) patients in an NHS hospital.

The "seamless service" referred to in the eighth principle is to suggest that the reformed

service will be co-operating across all the organisations which should work together. It hopes no patient "gets lost - neglected" in the gaps of the system. It is a statement of good intent.

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The National Plan of 2000 was "designed to create a universal public service delivering what people expect in today's world. It was underpinned by the decision taken in March 2000 to commit to a sustained increase in NHS spending. Over five years the government is increasing spending by a third in real terms, with the expressed aim, over time, of bringing health spending up to the EU average". (16)

Long-term planning is necessary for large-scale public sector developments. However, programme promises present hostages to fortune. There are many vested interests in the NHS who will take advantage of this generosity. There is serious danger that the level of care patients receive will not improve while costs of providing it will increase greatly.

"The Plan seeks to "universalise the best", removing the significant variations in local performance and closing the gaps between the UK's performance and those of other developed countries." (17)

"Over the next ten years the commitments to modernise the service set out in the NHS Plans and the National Service Frameworks will begin the process of catch-up and the achievement of consistency. This has long-term cost implications." (18)

For financing health care services the Wanless Report of November 2001 came out emphatically in support of public funding through taxation. "The UK system of financing (health care) appears to be relatively efficient and equitable. It delivers strong cost control and prioritisation and minimises economic distortions and disincentives. A further key advantage of the UK's funding system is its fairness, providing maximum separation between the individual's contribution and their use of health care. The main disadvantage of a predominantly social insurance based model is that the revenue base is more concentrated, falling on employment to a greater extent than in countries with a higher proportion of general taxation funding. Private funding mechanisms tend to be inequitable, regressive, have weak incentives to cost control, high administration costs and can deter appropriate use." (20) The NHS has had a good control of expenditures up to the present. That is no guarantee for the future. There is evidence social insurance provision for health care can be expensive. Decisions on what to do or what is possible may result from insurance company and hospital negotiation or custom and practice. In no system is the patient / customer given the degree of choice which is desirable (especially by those speaking on what is "politically correct"). In discussions the language can be Orwellian. Advocates of devolution and decentralisation

claim it is good to have decisions made as near to the point of action as possible - ignoring that it allows the centre to declare that it is not to blame for errors / mistakes. Those who claim that the patient / customer is the key figure and must be involved in all decision making - tend to ignore the excessive demands upon resources. Most patients are not in a position to make acute / serious comments upon their condition. They can comment on their personal treatment.

Inspection of Private Sector Homes for the Elderly[52]

One step which might help to improve the quality of service in response to public enhanced expectations is the establishment of an independent inspection service which will inspect both the private and the public sector provision of care. Up to the present time the private sector has been inspected - by agents of the public sector. The health authorities inspected all nursing homes in the country. Their own hospitals and other establishments were not inspected. The social services department inspected all private sector residential homes - while residential homes which they ran themselves were not inspected. In both cases the standards of accommodation and staffing which were required of the private sector were higher than those provided by the inspecting authorities in their own establishments. By continuously raising standards required inspecting teams were able to put impositions on the private sector which made it very difficult for their businesses to remain viable.

From April 2002 a new inspection service will be in operation. It should be even handed in its inspection of private and public sector facilities. However, it has started by demanding that all those who own / manage private sector residential and nursing homes submit to them for re-registering. This means they are going to decide whether people who have been managing the homes satisfactorily under the existing system of inspection should be allowed to continue. This is required before they have reached the point where their statutory powers operate and before they have carried out any inspections. At the same time they are levying charges for the re-registration of those running / managing the homes and charges for the inspection / approval of each member of staff who is employed. These represent additional charges on a private sector which is being squeezed already by the local authority social services not paying fees sufficient for the services which are supplied. Over 30 000 beds which were suitable for the care of the elderly have been lost in this sector in the past two years. This is at a time when acute hospitals are short of bed space because of bed-blocking (being unable to discharge people after hospital treatment because "they have nowhere to go" - which means that the authorities will not pay the fees to private sector homes).

[52] *see also National Care Standards Commission below*

From 1993 the social services were made the "gatekeeper" of entry into residential and nursing home for care. The social services appointed an "Allocation Manager" who decided whether elderly infirm should go into residential care or remain in their own home. Elderly with assets of above a few thousand pounds have to pay for care until their assets had been reduced to this relatively small figure. Anyone owning a house "in a property owning democracy" would have to sell it to pay for care. Public sector homes charged elderly fee paying residents more than they would have paid for care in the private sector. This "strange" situation could arise because the social services acting as "gatekeepers" influence choices and many people assumed that they would be charged less in the public sector provision. Ensuring its homes were full increased local authority income.

Care of the Elderly

This issue has risen to the top politico-health issues in the last two years. There has been growing pressure for fair treatment of the elderly in the provision of care. This has arisen because fee paying residents find themselves alongside those who are making no contribution to their fees. The argument is that "responsible citizens" who have been encouraged to provide for themselves for their old age are being penalised for their thrift. There was an enquiry into this issue. The majority of the members of the enquiry recommended that all care fees should be paid. Two members of the commission made a minority report opposing the view of the majority. The government adopted the minority viewpoint - because it was the less expensive one.

In 2001 the Scottish Parliament voted to pay all residential care fees. This was one of the first examples of the effect of political devolution on health care decisions in the UK. The Scottish decision encouraged pressure in England and Wales. The government has decided recently to pay for nursing care for fee paying residential patients. This has led to problems of defining what "nursing care" is.

It is useful here to relate that the government introduced legislation in 1984 - Residential and Nursing Homes Act - which laid down what kinds of care could be provided by each type of home. This formed part of a registration process. However, both government and local authorities in subsequent years ignored their own legislation. Residential care homes were allowed to cater for patients who in 1984 should have been allowed to be resident only in nursing homes - where trained nursing staff were a registration requirement. In 2002 the government is "putting this matter right" by classifying all nursing homes that remain as being "residential homes" while still requiring them to maintain their trained nursing staff.

This is a good example of the public sector organising the rules to favour the public sector.

The care of the elderly remains a controversial political issue. With increased longevity there are more and more elderly people. Many enjoy good health and remain active and mobile until they are quite old. However, the elderly do become a greater cost to the NHS - to maintain their healthy states and to check up on their condition. The "grey" vote is important to the politician. Its voting is more stable and predictable than that of the younger generations. A BBC telephone poll on February 20, 2002, showed of twelve important NHS issues put to the public "Payment of health care fees for the elderly in residential care" received over 50 % of the votes cast. This was the most important health care issue in the view of respondents. Interestingly telephone voting is something younger viewers will use more than the elderly - which suggests that the view is held across the age spectrum.

Linked with the payment issue is the question of age discrimination in the operation of the NHS. Many NHS trusts have had in operation a policy of not providing as full services for the aged as they provide for the younger population. For example there has been a policy of doctors in hospital writing up instructions that if patients beyond a certain age suffer a heart attack they are "not to be resuscitated". This has been done without consultation with the patient or relatives. In other cases patients admitted to hospital with suspected heart problems are not be sent to a specialist coronary care ward if they are beyond a certain age. A local health trust known to the writer was operating such a policy for those over 78 in 2000. The policy was not publicised; it was not in the public domain but it was in operation. "Age discrimination is a recognised problem in the UK health service. It is becoming, and will continue to be, increasingly unacceptable. This will lead to more health care use among older people." (20)

Is there a correct % of GNP which should be spent on health?

There is a common belief that the % of GNP spent on health is a good criterion for judging the effectiveness of the service. This belief needs to be challenged. The Royal Commission on the National Health Service in 1979 observed "that good health depends on much more than a good health service and that the measurements of "health" and of the effectiveness of health care are, at best, uncertain sciences". (21)

The EU average expenditure on health is 8 % of GDP. UK vital statistics suggest that the "under-resourced health care services" of the UK (spending 6.9 % of GDP) have provided a level of care which compares well with countries with much more resources in the way of doctors, nurses and beds. The NHS has made good use of the resources it has but may now

be fraying at the edges. This is a reflection of the impact of technology and the generation of increasing expectations. Some EU countries have "leapfrogged" others by introducing more advanced technology - as has happened in the past in other areas of the economy. It is for the UK NHS to learn from its neighbours. It can "catch up" where it has clearly fallen behind - and it can show the lead in resource management.

The number of qualified staff will place constraints on the health care system. How much constraint - it will depend on the quality of the staff and the efficiency with which they are applied to their task of providing for the welfare of their patients. It is clear that positive lifestyle programmes and the control of the spread of epidemics in the global economy will be the biggest contributions to improved health.

The way that health care resources are used will change in the future. Individuals will be encouraged to be responsible for their own care in minor illnesses. This is being encouraged by making more pharmaceutical products available without prescription - while at the same time limiting the amounts available in standard packages (to discourage overdosing). The pharmacist has always been important but people are being encouraged to consult them more than in the past. NHS Direct - the telephone enquiry service to trained nurses is a "port of call" for advice before "going to the doctor". The growth of health and fitness clubs is another facet of this trend.

Nurses are taking over work previously done by doctors - freeing doctors for more consultation time with patients in general practice or more specialised forms of treatment in hospital. Health care assistants should be doing the more routine work on wards - although the training of health care assistants has not been given the importance it deserves (and abolition of the state enrolled nurse (SEN) - a level between health care assistants and qualified nurses appears a retrograde step). GPs working in teams will be able to specialise within their group practices and have the support of considerable nursing, IT and administrative support staff. This should offer a better service to the patients who are on the "practice lists". Primary care units may increase the range of treatments which they can provide and reduce numbers referred to consultants.

Hospitals should concentrate on acute cases and provide intensive and high dependency care. Facilities for the elderly should be improved (although trends at the present time suggest that large scale provision by the private sector is being (deliberately?) strangled by lack of funding. Thousands of private sector beds have been lost while large numbers of elderly occupy beds in hospitals which cannot be made available for acute waiting-list patients (bed-blocking).).

Devolution and health care

Devolution in the UK has led to Scotland, Wales and Northern Ireland each having a system of health care provided which is different from that in England. "Mortality and morbidity rates are higher in Northern Ireland, Scotland and Wales than in England. However, alongside these greater health needs the three countries have more health care resources. Funding per head, the number of hospital beds and professional health care staff are all above the levels in England." (22) It may appear ironic that the "fringe regions" of the United Kingdom have more health care resources per head allocated to them than the population in England. This is the case with resources in all other sectors of the economy, e.g. education. The difference may be accentuated by the concentration of new entrants into the UK being concentrated in London and the South East. Statistical data are always lagging behind reality. Higher mortality and morbidity rates in Scotland, Wales and Northern Ireland may be a reflection of past environmental factors or of hereditary and genetic factors. These areas have traditionally been areas of net emigration. Will those who have emigrated have been the more virile of the population? It appears that needs in these areas for health care are greater - and there has been some effort to adjust resources to need.

Slovakia will not have the problem of separate health care administrations in a devolved government system. However there is a need for inter-regional comparisons to be made - to compare those hospitals which perform better than others - either overall or in some areas of specialisation. There should be every effort to ensure that the practices of the best performing hospitals are publicised. Poorer performers must be encouraged to modify / change their practices - and adopt methods which have brought better results in other hospitals.

In the spring of 2002 the NHS has started to grade hospitals on their performance. It compares the best with the rest. It has begun also to "blacklist" some hospitals. It is proposed that managers from those hospitals which perform the best will be sent in to manage those with poorer performance by the rating used to measure performance. The idea is attractive - but there are only limited numbers of "managers" with the ability to step into a completely new set of conditions and "turn them around". There is even the danger that if they were key personnel in the hospital from which they have been moved that the quality of management and services there will fall - although this might not become visible for some time.

Examples of the use of performance indicators to compare hospital trusts (i.e. hospital management units) are given in Appendix 1. Another form of comparison is to look at performance of hospital trusts in the treatment of specific diseases. An example is given in Appendix 1 of "Death from Cancer in Health Authorities". These comparisons are available

on the internet and can be accessed at the web site www.doh.gov.uk/nhsperformanceindicators. Correctly used availability of information of this kind is to be applauded. However, the volume of statistical information can submerge or confuse those other than the cognoscenti. Furthermore, hospital managers may see it necessary to spend their time ensuring that their figures look good. Hospital reputations and funds from the central government will depend upon how well presented rather than how accurate are the basic statistics.

The availability of statistical information is part of the government's strategy to make all parts of the public sector IT oriented and IT proficient. This is a desirable objective which is being applied in the schools as well as in the hospitals. Bradford University was a pioneer of a policy that everyone, whatever they were studying at whatever level, must be computer literate. Access to information is opened up for anyone - not merely from local and national sources but also international. This "revolution" is shaping all aspects of life including hospital management and hospital policy making. However, with the volume of information available its quality and reliability become more important.

The National Electronic Library for Health (NeLH)

To improve the running of hospitals and to meet the rising expectations of the users of hospital services it is essential that all those who are working in the health care services have the best advice and the most up-to-date knowledge available to them - as well as it being in a form which is clear and easy to interpret. Mistakes are a part of everyday existence - but mistakes in the hospital environment can have shattering consequences for those who are adversely affected. The National Electronic Library for Health (NeLH) is being developed to provide doctors and consultants with up-to-the-minute information they may need about the increasing range of illnesses and conditions with which they have to deal in this complex world. People travel vast distances in a few hours. They can carry into new areas such conditions to which indigenous populations are vulnerable.

The NeLH has three objectives:

1. To provide a clinician within 15 seconds of initiated search for information with a synopsis of the current "best knowledge" in a form that can be read in 15 seconds (i.e. quickly - so that the clinician can be aided in making a decision about a case / problem /condition with which he / she is faced.
2. To provide clinicians with "structured abstracts" of the 15 second synopses which can be read in 5 minutes.
3. To provide clinicians with access to the full text of documents on which these structured abstracts and synopses are based.

The NeLH will seek to provide access to health care information to assist both the specialist and the ordinary citizen.

The structure of the NeLH will be:

1. The know-how floor that will contain official guidelines to promote consistency of care.
2. The knowledge floor that will offer access to electronic journals and data bases.
3. The patient floor that will provide accredited information in non-technical language.
4. The virtual classroom that will offer resources in health informatics.

"We will expect virtual libraries to offer links to real libraries, helpdesk support and bulletin boards thus linking specialists and remote practitioners in virtual communities". (23)

Another aspect of this IT development is the creation of the NHS database. While this may be seen as a wonderland for statisticians and IT specialists it has a much more practical objective. It is necessary for the NHS to organise its data collection so that it is in a consistent form everywhere. Otherwise its usefulness is dubious. The data bases have an important role in supporting the flow and quality of information used in different parts of the system. Health care professionals must be able to obtain the relevant information when and where they require it. One of the clearest examples of this is the need to link all records about a patient collected in different parts of the NHS to be available to the health care professional wherever a patient attends for treatment. This would create an electronic patient record which could be turned up wherever the individual might present or be presented for treatment, e.g. following an accident in some other part of the country. For years industry has offered comparable systems. (If I take my Volvo car to any Volvo garage in the country the staff there can access within seconds the full details of the vehicle's history.) Much more than this should be done with care for human beings who are more complex and who may be harmed by treatment if aspects of their medical history are not known.

Progress is being made on this highly desirable set of objectives. However, other proposals for NHS reorganisation make implementation more difficult. A process of decentralisation - which, it is claimed, is to encourage local decision making - and continuous change and instability for the staff make implementation of consistency more difficult - although information should still be accessible.

NHS Direct

NHS Direct represents another innovation. This service is available via the telephone and / or the internet. Anyone who has a health / illness problem can telephone the service and get

advice - including the advice as to whether they should visit a doctor or whether they should handle the problem in some other way. The objective of establishing this resource was to take pressure off the doctors in their surgeries.

It was also a move towards encouraging people to provide their own cures for minor illness with the help of their local pharmacist or NHS Direct. To help this trend a range of medicines which were previously available on prescription can now be obtained "over the counter". A greater interest in "homeopathic medicine" shows a growing interest in alternative medicines - which suggests that many people are not as trusting the medical profession and "scientific medicine" as they had been. It needs to be remembered that most rural communities relied until relatively recently upon "traditional remedies" for many ailments. "Going to the doctor" was a last resort - partly because of the distances involved and partly because of the cost. Instant communications, rapid access to "the doctor", no "screening" of the level of seriousness of the illness and charge for the service have created the demand.

It is early days to judge the effectiveness of the NHS Direct service. It requires well qualified nurses to staff it - and the UK is short of nurses on the hospital wards. It will provide callers with good advice. It may be subject to timewasters who can be a plague to all types of voluntary as well as public help lines.

National Institute for Clinical Excellence (NICE)[53]

Technology in medicine is changing rapidly. It makes more things possible - but more complex processes are more costly. The latest scanners are very expensive. Of those installed in UK hospitals many have been provided by charitable fund raising. (This is an aspect of health financing and health care research which is referred to later in this paper.)

The pharmaceutical industries are in a constant search for new drugs - partly because of a "built-in" tendency to innovate to find new market "niches" and to outflank their rivals. Research is essential to counter the adaptability of bacteria and viruses. Doctors are struggling to "keep up to date" with the latest in their field of medicine as well as battle with administrative requirements and changing directives from the Department of Health and the government.

The NHS - or more particularly - the hospital trusts and the general practitioners - now in their group practices and primary community health care units - are targets for the pharmaceutical firms. The medicines bill for the NHS in 2000 was ?7 billion - ?118 per

[53] *established in 1999*

person in the country. This was 12.3 % of total NHS spending of ?57 billion - ?970 per person. (24) The cost of medicines have tended to rise more rapidly than other costs. Also people are using more medicines. In 2000 10.7 prescriptions were written for each person in the country. In 1990 there were 7.8 prescriptions written per person in the UK. (25) This is a 37 % increase in the number of prescriptions written per person over ten years during which the population has remained relatively stable.

Additional costs can be "loaded on" the NHS budget by the techniques favoured by some doctors who may be innovative or who are not cost conscious. Pressure groups may seek treatment on the NHS which is being provided in "new" areas for which people are paying in a clinic. This has happened, for example, with demands for in vitro fertilisation and other forms of help to infertile couples. Changes of "fashion" in treatment can occur, which adds to costs. There has been much publicity about celebrities having their babies by "cesarean section". As a result there has been a significant increase in births by this method. In 1998 - 1999 there were 83 000 births by cesarean section. In 1999 - 2000 the number had risen to 93 000 - a 12 % increase in a year.

The devolved nature of the NHS has led to there being different policies in different districts. This can affect use of beds or which hospitals provide which specialist services. It has become a "political hot potato" / issue in what is known as "post code" prescribing. There are known treatments which some health authorities decide to use - and other decide not to do so - because they have allocated their funds to different priorities.

NICE was established in April 1999. It has become central to the modernisation of the NHS and to give guidance as to the "best practice" on the range of problems set out above.

Chairman of NICE, Sir Michael Rawlin, in the St. Paul International Health Care Annual Lecture in September 1999 commented on the background of setting up NICE and its purposes.

"It is universally accepted that health professionals are underachieving. This is not a problem confined to the UK, but one that is a global manifestation of the difficulties we all face. As a result of this underachievement there are unacceptable variations in clinical practice; poor uptake of effective treatments; too great use of inappropriate treatments; and continued use of ineffective treatments." (26)

Rawlin asserted that there were two reasons for this. Firstly, "there is a burgeoning knowledge base and it is becoming increasingly difficult for health care professionals to keep pace with research findings and adapt them to clinical practice". Secondly, "health care professionals face tensions in the way they try to practice their clinical disciplines - tensions

between equity and choice; between efficiency and quality." (27)

The speaker commented on various attempts to improve performance. He believed "clinical guidelines have a critically important role to play in health care delivery." (28) However, new fashions tend to get taken on by everyone without adequate reflection. Rawlin commented "The production of guidelines has become a growth industry; and health professionals have found the plethora of guidelines currently on offer bewildering in number, uncertain in content, difficult to access, and very often totally indigestible." (29)

NICE was to provide the health care professionals in the NHS with guidance on clinical effectiveness and cost effectiveness of the management strategies they need to use to give their patients care of the highest quality. Also it should carry out continuous auditing of the outcomes of recommended methods to see if and how improvements may be made.

NICE will (a) undertake to publish appraisals of new and existing health technologies to advise health professionals on their use; (b) develop clinical guidelines for health professionals on care programmes for individual conditions; (c) generate methods of clinical audit for health professionals to monitor their adherence to the appraisal advice and clinical guidelines.

NICE will review health technologies on the basis of clinical effectiveness and cost effectiveness - including societal costs. New technologies may be reviewed "one or two years before marketing". With established technologies manufacturers will be asked to submit specifications for review and comment. It is the "Institute's" job to ensure that things in use are the most suitably available for the tasks to be done. "NICE intends to encourage innovation and help ensure that when innovative products become available, they reach patients as quickly as possible." (30)

NICE should contribute to the management of the NHS by providing a rationale for the use of its resources. NICE cannot make more money available but it can make the best use of the money provided.

The guidelines which NICE produces will be provided in three different forms for target groups. The first group is the range of health workers who until now has been the only one which has been considered. There will need to be guidelines for patients and carers - especially if the patient is to be put in the centre of the stage.

To operate effectively NICE will need a competent staff - but the goodwill of the various health services, universities, the British Medical Association and nursing organisations will be more important. The staff will have to develop a very competent process for "putting over its case". It will succeed only if it has full support from patients and public, health

professionals and managers, and the health care industry.

An example of NICE at work has been its testing and ultimately, on March 15, 2002, approval of the use of "Herceptin" for the treatment of HER2 metastatic breast cancer. The drug can extend life of someone with advanced breast cancer by 10 months or more. This drug has been available in the USA for four years and in Europe for 18 months. In the UK about 2000 women develop this type of cancer each year. However, in the UK "only a handful of authorities have allowed it to be used mainly because of its costs". (31) Now all health authorities are allowed to use the drug at a cost to the NHS of ?17 million a year. "1600 breast cancer patients are expected to get Herceptin alone at a cost of ?5300 each (per annum) and 450 women will receive the combination therapy (with Taxol) at a cost of ?15500 per person p.a." (32)

There had been criticism of NICE for the time taken to make a decision. A spokesman for NICE said "I would like it to be clear that NICE does not take such decisions lightly. This decision is incredibly important for women and it was entirely appropriate that we made the right decision based on the right evidence." (33)

NHS Centre for Health Economics at York University[54]

There is close co-operation in between the NHS and many universities. York University's NHS Centre for the Reviews and Dissemination produces health care bulletins based on systematic review of research on clinical effectiveness, cost effectiveness and acceptability of health care interventions. Its studies range from "The Management of Primary Breast Cancer" to the "Prevention and Treatment of Pressure Sores" and "The prevention and Treatment of Obesity". In the past 18 years 60 000 copies of studies carried out by the unit have been distributed free within the NHS. Health authorities distribute the materials to GPs. The work done by this centre will be very important to NICE as it tries to decide on what is the best advice it can give to the health professionals on the many difficult issues which they face.

An interesting paper on developments in health care published by the centre is named "Paradigms and Research Programmes: is it time to move from health care policy issues to health economics". "It concludes by asking whether the magnitude and magnetism of health care policy issues will continue to prove too strong to allow health economists, should they so wish, to steer their research and educational programmes more directly towards "health" rather than "health care" as the relevant social want". (34)

[54] *established in 1983*

General Medical Council (GMC)[55]

The General Medical Council (GMC) has been part of the health overview system since it was set up by Act of Parliament in 1858. Its role is well established. It has four main objectives: (a) to keep up-to-date registers of qualified doctors; (b) to foster good medical practice; (c) to promote high standards of medical education; (d) to deal firmly and fairly with doctors whose fitness to practise is in doubt.

From May 2000 it has been carrying through consultations leading to "the most comprehensive and wide ranging reform of professional regulation since Parliament set up the GMC in 1858". (35)

The GMC Council had had 104 members - 54 doctors in practice; 25 doctors from approved educational bodies such as medical colleges; and 25 members of the public appointed by the Privy Council. The new body has 35 members of whom 21 are doctors and 14 are representatives of the public. This "streamlining" of the supervisory body is trimming it to a group of active members (no occasional attenders or "sleepers"). The emphasis is on getting "public" views understood by the professionals to be acted on - rather than the professionals explaining why the status quo should be maintained.

Consultation of all interested parties produced a paper on "The Privileges and Obligations of Registration" published in December 2001, which stated:

"The Council's preliminary view is that none of these privileges should be available to doctors who are not participating in revalidation. We believe that, as with all the other privileges of registration, doctors who wish to prescribe should demonstrate their fitness to practise through revalidation." (36)

The GMC licences all doctors to practise in the UK. In August 2001 the GMC took a great step towards "open access" for the public of information about qualified doctors. The details of the qualifications of more than 200 000 doctors who are on the register are now "posted on the internet". This will have two benefits for patients. They will be able to check for themselves if they are going to see a doctor to make sure he is properly qualified. Also, employers will be able to check much more easily and regularly that the doctor's registration is still current. The online records were simply an extension of the register already published by the GMC. (37)

The GMC must regard the NCAA and CHI as entering an area which they have

[55] *established by Act of Parliament in1858*

successfully and satisfactorily monitored in the past. The NCAA and CHI are new and untested. The GMC reforms are a response to higher expectations of patients and public - and they show that the GMC wishes to improve the quality of the health care services. It recognises the need for constant retraining of staff to keep up to date with all the changes in technology; know how; medicine and nursing practices. The new institutions have laudable objectives. However, they have the same objectives as those which the GMC carries out.

The creation of the NCAA and CHI is "to prove that something is being done to tackle health service problems". It diverts current resources, adds to demands upon overworked staff and does little to improve the immediate situation on hospital wards. These are "centralising organisations" setting standards for the whole country - possibly reducing the opportunity to experiment and innovate - for fear of being treated as "sub-standard". The centralisation element implicit in most of these supervisory runs counter to the claimed objective of greater devolution of responsibility to those "who do the work". Their work appears to duplicate that of an existing statutory body - the GMC.

Commission for Health Improvement (CHI)

CHI began to operate in April 2000 to improve the quality of patient care in the NHS across England and Wales (N.B. Scotland and Northern Ireland have their own arrangements). It is part of a "patient centred" approach.

"For many years it has been apparent that the standard of care offered by the NHS in England and Wales has varied greatly, for example, between hospitals, between departments in the same hospital and between general practices. CHI is one of the government's reforms to address unacceptable variation." (38)

CHI will seek to assure, monitor and improve the quality of patient care by "clinical governance reviews". Such a review is (a) patient centred, (b) checking who is responsible for quality, (c) ensuring high standard, (d) improving patient services and care. It will carry out a four year rolling programme of research into current practices and how they may be improved. CHI will disseminate good practice throughout the NHS.

There has been little time to judge the effectiveness of this organisation. Statements of good intent are easy to make and difficult to implement. The British Medical Association (BMA) said recently there was a danger of NHS staff being overwhelmed by "innovation fatigue".

National Clinical Assessment Authority (NCAA)[56]

The NCAA is an organisation which operates only in England. There are parallel bodies covering Wales, Scotland and Northern Ireland. At the moment the guidelines are similar in England and each of the devolved authorities. It is unavoidable that over time differences in the guidelines will develop.

The NCAA is a special health authority set up as one of the central elements of the NHS's work on quality. The objective of the authority is to provide a support service to health care authorities, hospitals and community trusts who are concerned about the performance of individual doctors.

The NCAA will not take over the role of the employer or be a regulator. It will help employers / health authorities by carrying out an objective assessment. Following such an assessment it will advise the trust of health authority on "appropriate courses of action". A key approach for the NCAA will be to ensure consistency of approach in dealing with doctors who have problems.

The government's justification for creating a triumvirate of bodies is that they are complementary organisations. The NCAA, CHI and the GMC (General Medical Council) are part of a framework protecting patients and improving the quality of health care. Their roles complement each other. NCAA assesses the quality of performance of individual doctors. CHI assesses clinical governance in all NHS organisations and investigates serious systems failures. The GMC investigates serious misconducts, health or performance issues which may call into question a doctor's competence and fitness to remain on the medical register.

National Care Standards Commission

It was established to come into operation on April 1, 2002. It will be the body to take on the regulation of social care (public sector) and private and voluntary health care in England. In Wales the Welsh Assembly will establish "machinery" to take on responsibility for this inspection work.

Applying similar standards to the private and the public sectors in the provision of care has long been an objective of those who believed that the same standards should be applied to both sectors. However, so much depends on how this is done. Decisions on who should receive what type of care should also be made by an independent body. It remains a

[56] *commenced work in April 2000*

responsibility of the social services that are the fund-holders. They will seek to tailor the needs of those requiring care to the budget available and not to the medical requirements of the patient. This means that there is a tendency to downgrade the level of care which the professional social care workers assert is required. Such an approach conserves funds. It does not maximise the quality of care of the patient. This is the reality whatever may be said.

Before it has officially started its work, the National Care Standards Commission has been signalling changes which will impose significant increases in the cost of providing services. It has been introducing very costly changes to the day to day operations of those places it will inspect. It is imposing charges for the repeating of authorisations which had been made by the inspecting bodies and inspection teams which it is replacing. It would have caused less disruption by only looking initially at those institutions which had not been subject to any inspection - which were the public sector institutions operated by the local authority social services departments. Those who have been subject to inspection could have been looked at on a "rolling basis" because they had been complying with clearly stated and openly known inspection requirements. Those who work in the private sector in Britain are firmly convinced that UK civil service, local authority and inspection agency will always operate heavy-handedly towards them. They see a built-in hostility in public sector health care institutions to the private sector.

Audit Commission for Local Authorities[57] and the NHS in England and Wales[58]

The Audit Commission appoints auditors to local authorities and to NHS trusts and health authorities. It prescribes the framework within which the local auditors work to ensure that data collected from different organisations is in a form which enables comparisons to be made.

The Commission aims to be a driving force in improving of public services. It develops national "value for money" studies which are designed to promote the economy, efficiency and effectiveness of health care services. In collaboration with CHI it conducts local inspections to see how well NHS frameworks are being implemented. The Commission will publish an annual commentary on NHS performance.

The Audit Commission's remit covers more than 13 000 organisations in the NHS, local government and police in England and Wales which spend over ?100 billion annually. It

[57] *Local Government Finance Act (1982)*

[58] *NHS and Community Care Act (1990)*

operates independently, reporting its finding without fear or favour based on the evidence.

The Commission is probably the most efficient monitor of the NHS and health care services. It has well tried methods of assessing performance. More important is that its staff is not subject to (contaminated by) the ethos of the systems which it is trying to assess. They do not adapt their work to the prevailing in-house work ethic and customary practices.

The Commission has managed over twenty years to gain respect of those it is appraising. The general public is well aware of the quality of the reports which it has produced. A few examples of recent reports will show how it performs.

A Review of National Findings: Day Surgery (13/12/2001) asserted that the NHS day surgery units in England and Wales "could treat more than 120 000 extra people a year, if the poorest performing (unit) came up to the same standard as the best". "Some trusts have very low rates for operations that others are doing well - for example some treat 80 % of inguinal hernia patients as day cases, while others, none." The report concludes that barriers to further improvement include inappropriate use of day surgery units, poor management and organisation and clinicians' preferences for in-patient surgery. It shows that most trusts have the capacity to treat extra day cases in their existing day surgery units if they used them more efficiently. (39)

"Patients will only get the best care if doctors, nurses and managers have reliable and accurate information. Good information is also essential to ensure that public money spent on health care is well used.

The NHS has recognised the importance of good quality data, but this report* shows that most hospitals need to take action to improve their basic systems. Auditors will support them as they do so, looking in detail at two vital areas over the coming months - the accuracy of clinical coding and key performance indicators." (40)

* The report referred to was Data Remember - improving the quality of patient based information in the NHS (15/3/2002). Data quality is important in the NHS because 15 % of the typical hospital budget and 25 % of the time of its non-IT staff is spent on the collection of data and the use of information. It is vital for planning and managing performance. Data quality is set to become even more of an issue with appraisals and revalidation of hospital doctors on the horizon and with electronic patient records.

Reducing waiting times in hospitals has been one of the main objectives of the present government since it first came to office in 1997. It had some success in bringing numbers down - partly by delaying the patient being put on the hospital waiting list; partly by concentrating on that issue as a priority. A report of the Audit Commission - "Report of

National Findings: Accident and Emergency" (25/10/2001) - will not be happy reading for the Minister of Health. "Waiting times in accident and emergency departments are getting longer, with only a few hospitals bucking the trend. Fewer patients are seen by a doctor within an hour, and admissions to hospital for the 20 % who need further treatment are taking longer than when the Commission first surveyed departments in 1996.

This decline in performance has accelerated since 1998. This is despite the fact that the number of doctors in A & E has increased by 10 % in the same period - much faster than the growth in numbers of the patients treated." (41)

The Audit Commission and CHI have collaborated to produce a report on cancer care and a booklet for cancer patients. NHS Cancer Care in England and Wales (25/10/2001) shows that there have been improvements in care of cancer patients since the Calman Hine Report of 1995. It reported that 92 % of urgent cases referred by GPs were seen within two weeks; that survival rates for most cancers are improving and that there are more specialist cancer surgeons.

However, people referred as non-urgent cases can wait longer for an appointment. GPs vary widely in how many cases they refer as urgent - which means that doctors who classify most of their patients as urgent will get them speedier attention. The report found that there were wide variations in how long patients had to wait for diagnostic tests. Delays may be caused by lack of equipment or by its poor use (i.e. under-use). "The Commission found a fivefold variation in the number of patients per MRI or CT scanner between hospitals. Equipment needs to be used more efficiently; some hospitals scan more patients with one MRI machine than others do with three or four." (42)

The report found "communications between cancer specialists and GPs is often poor, with GPs missing out on key information about their patients. This hampers GPs' ability to discuss diagnosis and prognosis with their patients." (43)

A 15-page booklet on cancer care - "Questions for Patients to Ask" - has been produced to help patients get the best out of cancer services. "As well as the (fifty) questions, the booklet contains hallmarks describing the features of a good service to help cancer patients understand what will happen at each stage of the process - from diagnosis to treatment and palliative care." (44)

"Our research has shown that people with cancer often find their journey through cancer services complicated, confusing and distressing. Patients do not always understand how cancer services are organised, and why they must see the range of health professionals that they see. We hope this booklet will give them a tool to better understand what is happening

at each stage of their journey and to reduce their stress at what is inevitably a very difficult time." (45)

The Audit Commission is one of the most effective investigative organisations to shine light on the mysteries and subterfuges of public bodies. Its methods and standards ensure that those in the services being monitored will receive fair treatment and every opportunity to explain their position. At the same time the Commission has the task of ensuring that it is the general public which is well served by the public services rather than those who work in the public services deciding how much (or how little) service they will provide.

United Kingdom Central Council (UKCC) and Nursing and Midwifery Council (NMC)

The UKCC has since 1983 (based on legislation passed in 1979) been the statutory body "to ensure nurses, midwives and health visitors provide high standards of care for their patients and clients". The UKCC was assisted by national boards in England, Wales, Scotland and Northern Ireland.

The UKCC played for the nursing the role the GMC played for the medical professions. 635 000 nurses, midwives and health visitors were on the UKCC register in 2001 - 2002 making it the largest nursing regulatory body in the world.

To achieve its aims the UKCC has:

(1) maintained a register of qualified nurses, midwives and health visitors

(2) set standards for education, practice and conduct

(3) provided advice for nurses, midwives and health visitors

(4) considered allegations of misconduct or unfitness to practice due to ill health

As from April 2001 it has been superseded by a Nursing and Midwifery Council (NMC). That these changes have come as part of the present government's reform is understandable. That it has been done with inordinate haste seems to be confirmed by a statement on February 13, 2002, that "All current UKCC publications will remain valid after 1/4/2002 until further notice. The new NMC has agreed this move and is keen to reassure all nurses, midwives and health visitors that they do not need to throw away their UKCC publications at the end of March". (46) To have to make such a statement so late suggests poor management and communications with those affected.

The UKCC had 60 members of whom 20 were not professional representatives. The NMC has 23 members of whom 11 are "representatives of the general public". The trend here,

as in the GMC, is to reduce the influence of the professionals in their "self-administrative" organisation. It increases the representation of the general public to widen the range of opinions considered and to alter the emphasis in decision making. In August 2000 the NHS executive put out a paper which asserted "modernising professional self-regulation should now be seen as a component part of a wider strategy to modernise the whole of the NHS to help deliver better health and faster, fairer care, to be effective, professional regulation needs to be open, responsive and accountable, focused on protecting patients and the public rather than solely on professional staff." (47)

With the rapid changes in nursing and medicine there is a need for every professional to receive further training. The one significant change in the role of the new body (the NMC) to that of the UKCC is that it will become responsible for the quality assurance of nursing education as from April 1, 2002, when it takes over the functions hitherto performed by the English National Board for Nursing, Midwifery and Health Visiting (ENB). The ENB ceases to exist on March 31, 2000.

It could be argued that the changes which have been made could have been done by modifying the existing statutory body - the UKCC. In the NHS plan the government set out key tests for all regulatory bodies. They must (1) be smaller with greater patient and public representation; (2) have faster, more transparent procedures; (3) develop meaningful accountability to the public and the health service. (48)

For the nursing profession the emphasis was on:

(A) Reforming ways of working by requiring the NMC to

(1) treat the health and welfare of patients as paramount

(2) collaborate with and consult key stakeholders (i.e. interested parties)

(3) be open and pro-active in accounting to the public and the professions for its work

(B) Reforming structure and functions to

(1) give wider powers to deal effectively with individuals who pose unacceptable risks to patients

(2) create a smaller council, comprising directly elected practitioners and a strong lay input, charged with strategic responsibility for setting and monitoring standards of professional training, performance and conduct

(3) streamlining the professional register

(4) providing explicit powers to link registration with evidence of continuing professional development

Health Ombudsman - Complaints against health services - Litigation and Compensation

Public expectations of the health care service have been aroused by the media and by the UK government making its improvement a central plank of its policy. At the same time the trend towards litigation to obtain compensation has increased the financial risks of the NHS.

Health Ombudsmen are in post in England, Wales, Scotland and Northern Ireland. Before taking up a matter with the Ombudsman a person must have tried and exhausted all local means of complaining. Then the Ombudsman will investigate certain kinds of complaint. For example, complaints against hospitals or community **health services can be investigated if they concern** (a) poor service; (b) failure to provide a service to which you are entitled; (c) maladministration; (d) care and treatment provided by a doctor, nurse or other trained professional; (e) other complaints against GPs, dentists, pharmacists or opticians providing an NHS service locally; (f) you have a right to information about how the NHS operates - and should be provided with it within four weeks - if not you have grounds to appeal to the Ombudsman.

The Ombudsman cannot take up a case which has been taken to court. There has been a growing trend in the UK for people to seek compensation "whenever there appears an opportunity". This is symptomatic of "Americanisation" of our "customs and practice". The NHS is exposed to great potential costs which will use up funds which otherwise would be available for patient care.

"Clinical Governance and the Central Negligence Scheme for trusts have highlighted the need for risk management. Injuries to patients caused by the treatment are much more common than is generally realised. In the USA, 3.7 % of patients admitted to hospital are injured by the treatment they receive, 1 % negligently; 13 % of these involve a death and 7 % permanent disability. Extrapolation of these results to England suggests 325 000 injuries per annum, including 42 000 deaths and 22 750 permanent disability cases. Litigation, complaints and negative media coverage have become increasingly common and methods to assist poorly performing doctors are now deemed necessary as reflected in the General Medical Council's new performance procedures".

"The financial cost of these injuries is large and is continuing to increase. Litigation costs for the NHS are currently approaching ?380 million p.a. and rising. The true costs are likely to be much higher taking into account additional treatment and staff time. Medical accidents have a high human cost with physical disablement frequently leading to emotional disturbance. Staff may also be affected, leading to distress, sickness and reduced efficiency." (49)

Alan Milburn, Secretary of State for Health, has set up a committee to look for radical reforms of the "clinical negligence compensation system". The Minister said "the current system did not work either for patients or for health staff, and was due for reform. "We have to find a fairer and faster way of compensating people when things go wrong." Average time for a claim to be settled (through the courts) is five and a half years. In 44 % of cases legal costs amount to more than the settlement." (50)

The government favour fixed tariffs for specific injuries paid out under a "no-fault" compensation scheme which avoids legal costs and delays. The Association of Personal Injury Lawyers (APIL) says "Our members know that patients are often as much concerned with apologies, explanations and reassurances that changes will be implemented as seeking financial compensation for their injuries, but current procedures fail to address this properly. We believe this leads patients to resort to litigation. And it does not help that there is no clear guidance to NHS staff on how to react when they believe a patient has been negligently injured." (51)

The costs of litigation and compensation create a problem that has to be settled quickly and fairly. There is always a high level of risk in having an operation. Outcomes for large numbers may be "predictable" - but for any one person there is an element of unpredictability. The usual insurance type of protection is not feasible. The NHS needs to be able to predict a level of compensation for negligence which will not jeopardise its main funds. APIL "agrees that the best way to reduce claims is to tackle the negligence which causes them. It highlights the need for an improved complaints system, a faster, cheaper litigation system and greater use of mediation to deal with disputes. The system we have now does not work for the patients and it does not work for the NHS." (52)

The Medical Defence Union (MDU) is the largest indemnifier of doctors for claims against them when something "has gone wrong". In 2000 the MDU paid out ?78m in compensation - money from the insurance industry. NHS compensation (in 2001 there were ?3.9 billion of outstanding claims against the NHS) comes from that organisation's budget. The MDU believes there has been a slowdown in patients suing doctors because "claims are resolved before reaching the courts generating savings on legal costs and the success of the NHS complaints procedure with 94 % of complaints notified to the MDU resolved at a practice level." (53)

Liam Fox, the Conservative Party spokesman on health, himself a doctor, warns that the compensation culture prevailing in today's neurotic society will hit NHS finances and give rise to "defensive medicine" with the "goal to protect the doctor's reputation, not to improve the patient's health". "If you have people suing a publicly funded health care service on a

regular basis then eventually everyone will have to pay money to cover this. I think our problem is a wider one. It is a problem that afflicts our society. It is the "money for nothing" and "somebody must be blamed" cultures, both of which are constantly encouraged by the current government." (54)

NHS Shared Services Initiative

The NHS is a UK wide structure with the four devolved areas of England, Wales, Scotland and Northern Ireland. It has followed through a policy of decentralisation - to the regional health authorities and then to the individual hospital trusts. Therefore services have been carried out at local level without consideration of the need for uniformity of standards or for accountability at national level.

Among effects of this pattern of development different systems have grown up in different parts of the country. It is difficult to co-ordinate these systems. Equipment is often not compatible. The methods of recording activities have not been standardised. The philosophy was that "those who were nearest to the point of decision making knew best what had to be done" and they have been left to do it.

The "National Plan (2000) is to give the people of Britain a health service fit for the 21st century. The NHS is a 1940s system operating in a 21st century world. It has (a) a lack of national standards; (b) old fashioned demarcations between staff and barriers between services; (c) a lack of clear incentives and levers to improve performance, over-centralisation and disempowered patients." (55) This is an admission of organisational dysfunction by a government keen to centralise control while appearing to devolve decision making.

The Shared Services Initiative, launched in October 1999, is an attempt to improve the level of co-ordination in the system. It may reduce the "waste" in unnecessary administration and duplication. It may improve the quality of the information which is being used to make comparisons between different hospitals for different kinds of treatment. There is an admission that the supply of "non-medical" services is "chaotically organised". There is no discussion of how a more "integrated" system might be phased in to keep down the capital costs - both of the equipment which may have to be discarded and of that which will be introduced to allow "across-the-country" co-ordination and compatibility.

"Shared Services represent a major change in the way support services are delivered to all NHS organisations. By centralising services - for example, finance - and taking advantage of the latest technology, they provide staff with more opportunities and release substantial sums of money for patient care." (56)

In 2001 there were "600 finance services in the NHS. Most trusts and health authorities have their own service, using a range of computer systems and processes of varying quality. **This diversity means** (a) that it is difficult to collate local, regional and national information; (b) a large number of organisations is competing for the same pool of skilled professionals, including new organisations like Primary Care Trusts; (c) there is inconsistency in the quality of existing services; (d) sharing best practice is restricted by the differing systems; (e) organisational boundaries limit the sharing of useful information." (57)

The Shared Services Initiative is considering that "between 8 and 25 centres" could provide financial services for the existing 600 centres. It could be linked with replacing the 25-year-old standard payroll system and bringing in a "human resources record system" which meets new legislative requirements. What is unfortunate is that the 600 centres will all introduce new methods of compliance before the Shared Services Initiative is introduced to them. They will all spend money - change systems - and then change them again. The effect can be that an initiative introduced to save money may take longer to introduce than anticipated and costs more than its advocates suggest. Independent observers may be astonished that this unwieldy system has been allowed to grow up. However, this is what happens if there is no steady continuous pressure to bring diverse units together - **when they are part of the same system**. Such dysfunction has been encouraged by creating trusts encouraged to "stand on their own rather than work together".

The **benefits which it was hoped to obtain from centralising shared services included the following:**

1. common finance systems across all NHS organisations will mean that information is consistent and can be accessed quickly to gain a national picture of performance
2. trusts and health authorities will be able to plan more effectively because they will be able to access relevant, comparable information
3. significant economies of scale will bring savings across the NHS up to ?180m a year that can be spent on patient care
4. the national shortage of finance professionals will be addressed through the pooling of resources
5. more rewarding careers for individuals because of working with more modern systems that remove unnecessary, repetitive and mundane tasks
6. opportunity to redeploy some finance staff into other areas of administration
7. if personnel and payroll information is on the same database records can be available to new NHS employers ending the existing time consuming methods (58)

The NHS has pilot schemes for introducing the Shared Services Initiative. The target is

that the system will be operative in the whole of the NHS by 2004.

The NHS produces much statistical material. The Shared Services Initiative underlines the need to make what is presented to the public more accurate and reliable.

The National Blood Service

This is an integral part of the NHS. From 15 blood centres it delivers blood, blood components, blood products and tissues to anywhere in England and Northern Wales. There are similar but separate services for Scotland, Ireland and Wales (excluding N. Wales); under the devolved government system operating in the UK.

Every year the NBS collects, tests, processes, stores and issues when required 2.5 million blood donations. It carries out research into improving the safety of blood and of new ways in which it can be used to save lives.

The NBS depends for its 2.5 million donations of blood each year on volunteers who do not receive any payments for the blood which they donate. This is a critical element of the service. It has been the tradition in the UK for all blood to be given free by donors. The same principle has been adopted for the donation of kidneys and other "body parts". This "free" supply of blood is an example of responsible citizenship. It compares very favourably with those systems - such as in the USA - where payments are made to blood donors. It is possible that the health professionals have used blood extravagantly because it was relatively cheap - having no purchase prices other than the costs of handling and processing.

A working party has been set up to look at aspects of blood use in the future:

1. How to minimise exposure to the unknown risk of transfusion transmitted vCJD by only transfusing blood when absolutely necessary.
2. How to ensure the most effective and efficient use of an increasingly scarce resource - the available blood supply.
3. Consider alternatives to blood transfusion - autologous transfusions programmes, all forms of blood substitute therapies, feasibility of bloodless surgical units.
4. Contingency planning for prolonged periods of blood shortages. (59)

The Welsh Blood Service covers two-thirds of Wales. It handles 123 000 donations each year "freely and voluntarily" given. The Service publicises its "Quality Policy" and its "Donor Charter".

On quality - "The Welsh Blood Service is dedicated to a system of quality management which will ensure that it provides safe, effective and timely blood products and services and

aspires to meet, in full, the expectations and needs of its customers (both donors and patients)."

The Donor Charter states "As a blood donor, you are freely offering the most precious of gifts - the gift of life to someone. The service must be certain that:

You are put at NO RISK when donating or giving samples of blood.

There are NO RISKS to the patients who receive YOUR blood." (60)

All the blood service organisations have similar publicity. They depend on volunteers for their supplies. Population profile and attitudes today may be making it more difficult to get the volunteers.

Ambulance Services

Ambulance services are provided statutorily by the local authorities. There are 37 ambulance services in England. Over the period 1997 - 2001 the number of emergency calls responded to by the ambulance service in England rose from 3.6 million p.a. to 4.4 million p.a. (22 % rise).

In 1995 - 1996 a system of call prioritisation was introduced by the ambulance service to try to ensure that ambulances went most quickly to the most serious cases.

The conservatives had introduced a "Patients' Charter" in 1993. This set a target for ambulances arriving at 50 % (or more) of category A cases (life threatening) within 8 minutes and 90 % of category B cases (other) within 14 - 19 minutes. In 1998 - 1999 20 of the 37 ambulance services achieved or exceeded the targets which had been set. However, in 2000 - 2001

- 3 (out of 37) ambulance services had been able to respond to over 75 % of category A calls within 8 minutes
- 12 responded to 60 - 75 % category A calls in 8 minutes (7 the year before)
- 11 responded to 50 - 60 % category A calls in 8 minutes (8 in 1999 - 2000) (61)

The above figures underline the task which faces the ambulance services in the next few years. They have made significant improvements in the service in the 1995 - 2000 period. However, from April 1, 2001, the government requires (has set a target of?) 75 % of category A 999 calls to have an ambulance on the scene within 8 minutes. The government requires that 95 % of B / C category calls are met within 14 minutes in urban areas and 19 minutes in rural areas.

Putting up the targets does not achieve them. However, some ambulance services perform

better than others. Staffordshire Ambulance Service achieved an 87.4 % within 6 minutes response to category A cases. West Yorkshire achieved 55.3 %. London's response rate for such cases in 1999 - 2000 was 35.8 %. As in all aspects of the health care services if poorer performers learn from the better performers there should be an improvement in standards. A recent report says "most up-to-date figures show that ambulance services still have a long way to go - what is more worrying is that response times in some areas are actually deteriorating." (62)

Mobile phone use has increased 999 emergency services calls - and made it more difficult for ambulance services to locate calls. To improve the arrival times at emergency incidents use is being made of "Global Positioning Systems" (GPS). Ambulances are being fitted with responders, which can ensure that their control knows precisely where they are - and direct them more quickly to the incident to which they have been called. (63)

There are private ambulance services which sub-contract work from the NHS as well as servicing the private sector hospitals. County ambulance services "offer the capability to convey any patient from out-patient to intensive care by road to or from any location in the UK or by air throughout Europe." (64)

A supplement to statutory ambulance services, some are funded entirely by public voluntary contributions. Cornwall, the south-western extremity of England, is thinly populated with many remote farms. On April 1, 1987, the Cornwall air ambulance came into service. It is used only for ambulance duties delivering paramedic help where needed swiftly. It is used as an integral part of the Westcountry ambulance service. In the first ten years the service carried over 7 500 patients. Many of these would not have survived had they had to wait for conventional services.

In the year of 2000 operating costs were ?65 000 each month. All this is "paid by means of charitable donations as the helicopter receives no form of "official" funding". (65)

There are now several air ambulances in the UK supported by charitable donation. They are examples of a tendency to "do something to meet a problem" when the government (at any level) fails to respond to a public need. The Royal Lifeboat Service provides rescue services at sea around the UK. It is funded entirely by charity. The Hospice Movement and some medical research organisations are in the same category. They seek to provide the services where government fails. Often they become pressure groups or initiators of new approaches which may bring advances and which are often resisted by political and professional hierarchies.

Hospices and Palliative Care Services in the UK

There has been considerable provision by the voluntary sector for the seriously ill - and especially for cancer sufferers - in hospices. In January 2001 there were 228 units with 3 241 beds providing in-patient palliative care in the UK. 57 units with 607 beds were managed and funded by the NHS. 171 units (75 %) with 2 634 beds (81 %) were funded by charitable donations. A continuous process of fund-raising with full-time fund-raisers encouraged public giving. The hospices were supported by volunteers who helped maintain facilities while the nursing staff concentrated on caring for the sick. There are 42 000 new patients a year. Admissions are 59 000 per year. 30 000 of those admitted died in the units while a similar number were discharged. (66)

This is an area of nursing requiring dedicated staff and keen support. It is remarkable that 75 % of funds required are raised by voluntary fund-raising activities.

Charitable Bodies - e. g. Samaritans, Oxfam, Churches, Medical Research

In the UK charities and charitable foundations have played a major role in the development of the education and health systems. When government did not involve itself in these matters charities have made provision. When government became the main contributor in these areas charities began to look at expanding the range of acceptable activities. Often they prodded governments into going "one step further".

There are many charities like the "Samaritans", Alcoholics Anonymous, and ASH (anti-smoking), which provide help to individuals who are sore afflicted and for whom conventional medicine is unable to provide.

There are many which fund aid and help programmes on an international basis like Oxfam or VSO (Voluntary Service Overseas).

The Churches, the Salvation Army, and Shelter (a housing charity) seek to help those who fall through the "social security net".

In 1998 there were over 18 000 registered charities in the UK and "the total income of all registered charities was ?19 749 690 739 (19.7 billion pounds). In 2001 a similar number of registered charities raised ?26 708 648 232 (26.7 billion pounds). The 2001 figure shows a 30 % increase over 1998. 372 of the charities have an income of over ?10m and raised 42.7 % of the money obtained in 2001 (?11.4 billion). (67)

The amount of giving may reflect an economy whose members have a large amount of discretionary income. It may reflect traditions of self help such as the formation of trade unions in the 1830s; the consumer co-operative movement in 1844 in Rochdale; the independence of the non-conformist chapels.

Activities of all these organisations supplement the work of health services, social services, education, and international aid. As well as the financial contribution made there is the inestimable value of the voluntary work that is done.

A study in the north-west of England (Manchester and surrounding area) estimated that voluntary organisation in the area "contributed over ?300m to the economy. If the efforts of volunteers are added, it is likely that the contribution to gross domestic product would more than double." (68) (Unfortunately, volunteer unpaid work does not get counted in GDP.)

The charities may encourage the statutory bodies to widen the scope of their activity. They advocate strongly the cause(s) which they are promoting. An area of charitable work relevant to the health sector is:

The Charity Sector in Medical Research

The Association of Medical Research Charities (AMRC) has the object of furthering medical research in the UK generally, and in particular, the advancement of the effectiveness of those charities of which a principal activity is medical research.

In 1998 - 1999 the contribution of AMRC member organisations to medical research was over ?400m p.a. Income had quadrupled in the period of 1987 - 1993. It had been over ?400m for the last six years.

AMRC charities funds are available for disease specific research. The purpose may be to search for better understanding of a disease; to prevent or cure it; to improve diagnosis; to improve treatment or to improve the quality of life for patients. In 1998 - 1999 the distribution of funds was as set out below (69):

74 % of the funds available through the AMRC are allocated to the universities and 16 %

General Medical Research	45.2
Cancer and Leukaemia	30.42
Heart, Lung and Stroke	11.59
Arthritis and Orthopaedics	4.29
Neurology and Mental Health	2.26
Genetic Conditions	1.35
Other	4.89

to the charities own research institutes (e.g. Marie Curie).

The public benefits because AMRC does not support research for commercial or private purposes - but only for public benefit. The UK benefits from having a strong charity sector which funds one third of UK medical research. This level of funding is unparalleled elsewhere in the world, nor is it found in other areas of science. (70)

The institutions receiving the funds benefit. The public and the NHS will benefit from improved understanding of disease and in the development of training and skills. The UK pharmaceutical industry's success is linked to the strength of life sciences, which is helped by the contribution of the charity sector.

The NHS has introduced numerous processes to improve its performance.

It needs to be repeated that all the evidence of past performance shows that the UK health care system has made better use of the resources of manpower and plant than the systems with which it is being compared. It has provided a more easily accessible service to its customers, particularly the poorest, than those of similar economies. At the same time it has to provide for large inflows of people from third world countries who have immediate access to health care. In many similar / comparable economies access to health care is not as easy as in the UK. Those who have not been previously registered have no "health insurance record card / number held by the health insurance provider". In insurance based systems the "gatekeeper" is the insurance provider - a non-medical assessor whose prime concern is the cost of what is being proposed. The NHS resources have been fully stretched because access is free. The only "gatekeeper" to forms of treatment and hospital admission is the GP who is part of the NHS service, sharing its philosophy, and concerned primarily with the treatment and not with the cost. GP fund-holding schemes, which had given the GP an incentive to consider costs, have been abandoned in the health sector reforms since 1998 (see addendum 3/4/02).

Therefore the NHS has failed to find sufficient funds to go into "more advanced practices in health care". Its performance in the treatment of some forms of cancer and heart disease are not as good as the best of other advanced economies. This has been highlighted in recent press reports. As a result the government has given priority to cancer and heart treatment. To the extent that this is responded to, while staff numbers do not increase, there will be delays elsewhere in the system.

With more time attention would be given to two other major issues. Financing of capital

investment and use of private sector health facilities are very controversial among health service staff and trade unions.

Since 1997 the labour governments have wished to show themselves financially responsible. They have succeeded by keeping taxes at the levels of their predecessors. They have tried to be co-operative with business - which has been helped by the economy being managed well.

The traditional way of financing public sector capital projects has been to raise money through taxation and sub-contract the work to the private sector. Payments would be made during construction. The buildings, e.g. the hospital, would be owned by the public when the work was completed.

New labour (the present) UK government has adopted a different approach. The "Capital Finance Initiative" (CFI) contracts with the private sector to provide the finance to build the hospital, equipping it and running it under contract for a fixed period - perhaps 20 years. The government says that this get hospitals built more quickly than if all funding had to be from the public sector. It will be a fully equipped hospital rather than a building "shell" (empty structure). The risks are being offloaded on to the private sector and the benefits will be seen by the patients using new facilities. The trade unions object to this process - and claim it is more expensive than if it were financed by taxation. They oppose the method as a "backdoor" method of "privatisation". The same debate is ongoing on the renovation of the London Underground using CFI.

Valid comment on this public sector investment debate is that all UK governments since the 1920s have failed to put sufficient capital funds into the public sector to maintain the quality of the stock. The most rapid capital reinvestment in former public sector industries (gas, electricity, telecommunications, and water) has taken place in the period since they were privatised during the years that Mrs Thatcher was in office. The most extensive hospital building programme that we have had in the post-war period was in the early 1960s when Enoch Powell was at the Ministry of Health.

Comments have been made already about the antipathy of health and social service staff to the private sector in health care. There has always been a "private sector" in UK health care. This catered for the "better off" who were willing to pay for their health care (usually through insurance) and for wealthy from overseas. In the early 1980s government decisions encouraged a growth of private sector involvement in the care of the growing elderly population. As a result the NHS was able to concentrate its resources more and more on treatment of acute cases (i.e. those requiring immediate treatment) while a mix of private (growing) and public (declining) provision was available for the chronically sick and the

aged.

The numbers of residential and nursing homes peaked in 1998 - 1999 when 29 434 homes were providing 609 146 beds, private and voluntary sectors homes provided around 500 000 beds, and 2 750 local authority and NHS homes provided for around 110 000 beds. (71) The labour government has been pushing up the costs of the private sector by demanding higher standards of accommodation and raising minimum wages above the RPI (retail price index) and the rate of inflation. At the same time it has failed to put up fees for those for whom it is paying in the private sector. "The typical nursing home makes hardly 50p profit per available care home bed per day at the average occupancy rate of 85.4 %." (72) By April 2001 the number of care home beds had fallen to 525 900 "as private care home closures continued on a rising trend and as local authorities and the NHS continued to downsize their in-house provision". (73) This is a decline of 83 000 beds in four years. This will have been accommodation in single rooms. Inspectors have insisted on individual rooms in the private sector while hospitals retained wards in the public sector. The loss of beds in the private sector is occurring when the NHS is keeping in hospital people who could be discharged - and in doing so "blocking beds" that would be available for acute patients.

Some matters for consideration by those looking at reform of the Slovak health care system

1. Those seeking to reform the Slovak health care system are committed already to provide funds for it through a compulsory insurance system of the kind favoured by countries like France and Germany. Therefore it will not consider the approach favoured in the UK - of funding the health care system from general taxation.

2. Slovak reformers are much better endowed with trained health care manpower than is the NHS. A weakness of UK health care policy has been to train too few doctors and nurses to meet the increasing demand. Numbers of doctors and nurses per '000 population are significantly lower than in Slovakia.

The Slovak Minister of Health should ask "Can the workload of the individual health professional in Slovakia be raised to a level similar to that of the health care staff in the UK?" If the "work-rate" of Slovak health care staff were raised it would show up the amount of slack (concealed underemployment) that there is in the Slovak health care system.

3. What do you do with this "surplus" of well-trained professionals? They might be allocated to do research - but this would bring no immediate return while costs were being incurred. They might be organised into teams to work abroad, e.g. in the UK on contract - as are German and Spanish doctors at the moment. This would add to experience; generate personal income for the individual health professionals - and for the state if the contracts were carefully negotiated. There is, of course, the danger that the health care professional will be lost to Slovakia if he / she settles down in another country. That will become the case anyway if Slovakia negotiates a successful entry into the EU. "Excess" health staff might be used to improve services in health sectors which may be "underserved" at present. There would not be much additional cost to the economy unless considerable capital expenditure is required.

4. Some sectors of the Slovak economy - e.g. railways - have their own medical staff. They may be paid from other budgets. Someone may say "We do not want the additional costs". Consideration should be given to having "one health system" for the country rather than a main system and others controlled differently.

5. A major impediment to reform is organisational inertia. UK governments have been seeking to change the way in which the NHS and other health care activities have operated. The conservative governments of 1979 - 1997 and the present government have met dogged resistance to change. This resistance to change has been much more determined in the NHS

than elsewhere in the economy. The NHS is the symbol of health care for everyone "free at the point of delivery (i.e. when needed)" and behind its banner the staff can seek public support in advancing their own interests.

In Slovakia it may be that the attitude of the health care sector is more open to change. However, this is unlikely. Therefore to be successful reform has to be carried through determinedly over a long period.

6. Reform of the health services is better carried through incrementally than "root and branch". For example, many of the new organisations in the UK are duplicating work done by existing organisations or by the organisations which they have replaced. (GMC already covered work for which CHI has been created. The UKCC has been abandoned for a new NMB - when the existing body could have been given the additional work.) There is a danger of "radical change" looking good at the time it is done - because "something is done" - and after a time having to be reformed again because it does not achieve the objectives for which it was introduced.

7. A review should be made of the use of buildings for medical purposes and any land that is attached to such buildings. There is a tendency in public sector institutions to "retain buildings" even when they are no longer being used or when they are underused. Pressure to keep buildings open because they have always been there - and provide employment - should be resisted. In the UK there has been a decline in the need for "isolation" hospitals and sanatoria. With improvements in transport there has been a process of closing down small units and concentrating activity in one larger unit. Underused assets can be put to alternative communal purposes where there is a demand - or sold. Funds realised can be used for other health care purposes including purchase of costly "state-of-the-art" equipment.

8. In the UK improved medication has allowed many mental health institutions to be closed down. Former in-patients now live in the community and fare well provided they take their medication. Strides in treatment in this sector of care enable many to maintain their life style in family and community virtually unchanged. Again there is opportunity to sell off buildings no longer required. Such funds could help pay for the additional "care in the community". Supervision in the community can be more demanding of caring manpower - Slovakia has the potential "luxury" of staff freed from other work who could monitor former internal patients living now in the community. It is essential that mental patients stabilised through medication take their prescribed medication regularly to maintain their condition. These patients need adequate monitoring in their own and society's interests - and Slovakia would, with training, have the staff to supervise.

9. In the UK the interest of the patient has been put "at the centre of the health care

system". This is the aspiration. It is a move away from a doctor / consultant led system - which has dominated hospitals in the UK since the establishment of the NHS in 1948. It is seeking to limit the control exercised by The British Medical Association, the various medical organisations and the trade unions. All these had group interests to advocate and support. It is the right emphasis - although its effective implementation is a long way off, if it is achievable. There are advisory panels proposed to which patient complaints can be directed. A "downside" of the emphasis on the patient is (a) that it may encourage criticism; (b) that it may make the medical profession more defensive; (c) that it ignores or downplays the inevitable risk involved in all medical treatment.

10. In the 1980s a system of health care was emerging in the UK which was leading to the public sector providing acute medicine and a private sector under inspection providing care for the chronically sick and elderly. This would have concentrated highly trained nurses and consultants in the acute hospitals and the general practitioners and other caring staff in the residential care sector. Unfortunately, the developments happened "by chance". When the government stepped in, it failed to take measures necessary to stabilise a clear private / public split. Since 1997 the trend has been reversed. There could have been significant benefits arising from such a division. These benefits have been lost by NHS hospitals keeping in their beds people who could have been discharged - and not being able to provide for all those requiring acute treatment.

Slovakia's health care system might find benefits gained from treating the patient clientele as falling into two distinct categories. The first is formed by those who require acute services in hospital treatment. The other is formed by chronically sick who make quite different demands upon the health care system. Many may be cared for by improved domiciliary nursing services. Others might be accommodated in private sector provided residential care home accommodation. The chronically sick will require "acute hospital services" when their condition changes significantly or when there are changes in treatments available.

11. An area of success in the NHS has been the increasing use of "day surgery" for many types of cases which used to receive in-patient treatment. This has allowed the NHS to reduce its needs for beds for patients requiring operations. It is also something of which patients approve.

12. The Piešťany health resort and the spas are part of the health care system. Already they provide for people from outside Slovakia to have treatment for payment. They offer treatment packages for which there is demand in many European countries. "Packages" would need to be tailored to the requirements of higher income groups - so that facilities in the smaller spas

would need to be brought up to "Piešťany" standards (not style of building - but single room with en suite facilities). Treatments should be advertised vigorously to increase demand. Charges should be reviewed to ensure that they are realistic. (Charges should be below those in Austria or Germany but higher than estimates based on current Slovak pay scales.) A visit in 1998 - 1999 suggested staffing levels could cater for more people without significant staff increases.

13. There is a need to study the feasibility of offering acute treatment to those living in higher income European countries. Contracts could be negotiated with insurance providers who would be interested in offers of treatment which were at prices somewhat less than in Germany, France or Austria. This would bring employment and income to the Slovak health service. A form of "private" sector activity could stimulate the "public" sector providing for the needs of Slovak citizens to make better use of its manpower. It would generate a steady flow of additional income provided that the level of utilisation of the assigned assets could be guaranteed by the terms of the contracts.

14. The NHS objective of linking all hospitals, GPs and primary health care trusts through the internet has much merit. There is need to ensure the confidentiality of personal information stored on the records. At the same time there is a need with today's much more mobile population for records to be available nation-wide. If there is a serious accident delay in accessing a patient's medical history can be critical.

15. The National Electronic Library for Health is worth adopting. It will become an essential tool for medical professionals to know what is considered best practice - and best advice - in a rapidly changing "field". This will be a main means of updating and training. Used creatively it could replace much of traditional lecturing with more effective presentation of the best available "lectures". Many of those who now provide lectures could be better employed giving hands on experience to those who would have had the lectures from the NeLH.

16. With increasingly sophisticated drugs and drug "packages" control of drug costs becomes ever more serious. The costs must be weighed against the benefits. A recent decision by NICE will cost the NHS an estimated ?17m p.a. An agency like NICE (National Institute for Clinical Excellence) is essential for testing and approving what is suitable for use. It must be independent of government control. Its testing must be rigorous. Its reputation must be such that the medical profession and the general public will accept its decisions.

17. Co-operation with the universities and private sector research establishments ensures that UK personnel remain at "the cutting edge" of medical research. The role of charitable giving in medical research needs emphasising. One third of UK medical research is supported

by donations to charity.

18. Stimulus to citizens to "help the health care service" (and others objectives - through charity giving) as a feature of blood donation, advisory services, hospice care and funding, some air ambulance services - shows what can be done when people are encouraged to do something about an issue in which they believe. "They can move mountains." There is a positive role in Slovakia for the voluntary and charitable sectors.

19. In the UK a weakness in the overall "health care system" has been that the NHS has been responsible for medical services - and local councils have been responsible for housing and for domiciliary care services. These two organisations should have co-operated together to create a unified pattern of welfare. Recent legislation has lain down that the two sectors should work more closely together. Whether they will is for time to tell. Too often public sector organisations which should co-operate do not do so. They compete to "control the territory which they occupy". Slovak officials should look at their health care system and see if there are areas where greater co-operation would improve the services being provided to the patient.

20. However good the health care services there is always room for improvement. The comparative statistics of hospital performance are still in the early stages of development. Over time relevance can be improved with refinement ensuring that the material submitted is sound. Publicity and access to information by the general public can stimulate a management whose performance is poor by comparison with other hospitals in similar environments.

21. Health care services must adopt positive policies encouraging healthy lifestyles and responsible habits. Otherwise health care services remain only a "repair system". Positive policies should discourage habits which are known to lead to specific diseases / illnesses - e.g. the link between smoking and cancer or between obesity and diabetes. Linked with this must be policies to improve the quality of life of those who develop chronic illnesses.

22. Health care services contribute to the improvement in health. However, quality of life has been improved by environmental developments - reducing pollution; health and safety legislation - reducing both accidents at work and work-induced illnesses. Improvements in other similar areas can reduce short-run demands on health care services.

Conclusions

This work was aimed at mid-term projection of trends in macroeconomic development of the Slovak health sector. Its eight chapters attempted to discuss chosen topics in wider context. The organisational design of health care system, the system of its economy and the contingencies were analyzed in the first parts.

The *analytic part* studied the financial flows within health care system following the OECD standard procedures in the figures of National Health Accounts. Thus, it presents an unique database of entries that were available before from different sources (Statistical Office, Ministry of Health of the Slovak Republic, Institute of Health Information and Statistics, Ministry of Finance of the Slovak Republic and Social Insurance Company) but were neither assorted, classified, nor integrated into separate groups and subgroups according to financial sources, health care service functions or health care assistants.

Creation of such a standardised database which figures, in particular, financial flows accurately and in detail is the essential precondition of analyses, prognoses and proper managerial as well as political decisions in the health care sector to be made. For better comparability, the database figures (in current prices for particular years) were converted into the *data expressed in real figures of 1995 (constant prices of 1995)* using deflator of non-market services, which significantly increases mutual comparability of particular yearly data.

During the monitored time period of 1995 - 2000 the highest attention of the Ministry of Health of the Slovak Republic in the field of payment mechanisms was paid to "input payments" that are based on payments for "readiness" to provide medical services in the sphere of primary medical care. The hospitals were also remunerated by cost method instead of output method through alternative mechanisms, such as "hospital-bed / day", perspective budgets, and contractual terms with the insurance companies. Such recompensing with state budget maintenance did not motivate the hospitals to effectiveness and cost reduction. The consequences proved in increasing hospitals' debts, mostly by the end of the monitored time period.

There seems to be a crucial need to increase the squeeze on the efficiency of *health insurance companies*. Thus, it will be necessary to make their accountancy (book-keeping), standard accounting, and procedures adapt to the standards appropriate to significant amounts of redistributed sources. At the same time, it would be useful to create an independent auditing body to control their financial management.

The *pricing system* in the health care is disputed constantly. The major cause is the state

ownership, unclear payment mechanisms, absence of accounting standards and procedures - not just in the case of insurance companies but also in hospitals. Instead of the prices, alternative evaluating mechanisms were used, such as "point", "hospital-bed / day" or "payment per capita" (flat sum) during the monitored time period. The real payment mechanism functions basically only in the private sphere (private dentists).

The outcome of non-functioning payment mechanisms, state ownership, and insufficient motivation of health insurance companies and hospitals is observed to be *increase of the debt.* Moreover, the increase was also caused by debt-clearing from privatisation incomes, which has consequently de-motivated the debt-cutting managers.

Not only the insufficient state transfers for state insured people but also the *decreasing employment rate* and growth of unemployment caused high financial instability of the health care system. The prognostic model was designed on this initial status platform.

As needed for this work, the *macroeconomic econometric model* ISWE01q4 was brought up to date and extended. Original model was constructed on the basis of database which contains more than 300 time series and over 80 exogenous and dummy variables. To estimate the regression equations, time series from 1993q1 to 2001q2 were mainly used. The model contains almost 200 equations, of which more than 150 are identities and almost 50 have stochastic character. For the model construction and its application the program product SORITEC[59] was used.

The time series in this model were extended and the behavioural equations were updated. In most cases the equations were re-estimated in the same functional specification and the same explanatory variables as in the previous version of the model (ISWE01q2) were used. A new block was introduced, aimed to describe health care system.

The extended model ISWE01q4 was verified for the needs of ex ante simulation of mid-term trends in *macroeconomic development of Slovak health care system*.

The next part of this work was dedicated to macroeconomic development of the health care system in the period of 1995 - 2000 which was characteristic of several reverses. Some of them arose in the overall context of macroeconomic development. The development was connected mainly to the changes of character of economic policy after the general elections in the years of 1994 and 1998. Changes in trends of the development of health care system likewise followed generally from the results of parliamentary elections; however - in particular - they mainly resulted from individual laws on state budget. The analysis of this period was divided into two parts: the overall macroeconomic development and the macroeconomic development of the health care system.

[59] *Closer characteristics of this model are to be found in (78).*

The trends in numbers of *particular group of health insurance payers* were analyzed for years 1995 - 2000. Out of the number of payers the incomes of health insurance system were derived. From *ex post* analyses, some discrepancies in health insurance system incomes occurred. These discrepancies were brought about mostly by deviations in labour market and state budget and non-financing of objective needs of medical care[60]. In alternative *ex post* scenarios, possible methods of calculation of payments were proposed. Summary of these particular alternative scenarios creates a complex proposal of optimal form of changes in health insurance system income, called *Scenario S0*.

The optimal version of changes proposal for years 2001 - 2006 was simultaneously re-calculated also by forecast *ex ante*. The final version is enriched also by other alternative scenarios. The results of these scenarios are evaluated in comparison to the base "optimal" scenario.

A conclusion can be drawn from these alternative scenarios. In the case of *unadjusted payment basis (scenario S1)*, the imbalances can grow. In the case of *valorisation by the CPI level (scenario S2)*, not worsened situation can be awaited. Decrease in unemployment by 1 % does not bring marked changes *(scenario S3)*. To be precise, *1 % decrease in unemployment rate increases the revenues of health insurance companies by 500 bill. SKK* on average. If the change was higher (5 - 6 %) the eligible effects would prove more markedly.

It can be concluded that if the present state of financing the health insurance system persists, the *employment should be markedly supported*. The valorisation of the payment basis minimum - respecting inflation - is necessary. In the case of *optimizing the redistributing process*, this would reduce creation of new imbalances. However, the imbalances that emerged in previous periods could not be covered. Those should be covered by external resources.

Changed system of financing, which would level the basis to minimum or average nominal wage, could later lead to decrease in the percentage *levy - up to 11 % (Scenario S4)*. In this case, the sources flowing into the system would not create new imbalances and they would restrict the existing ones. Decreasing percentage levy could, on the one side, diminish the budget tension. On the other side, the decrease could lead to *supporting the labour demand*, which could consequently increase the incomes and additionally diminish the budget tension. In the case of additional external sources this system could be able to cope with the imbalances[61].

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[60] *For example, needs of medical care for unemployed receiving unemployment benefits are not changed on the day of social status change. The payments to health insurance system decline.*

[61] *It is necessary to point out that though these are precise scientific calculations of ex ante scenarios they have a strictly numerical character.*

A scenario assuming an exclusion of the entire state budget from health care financing (Scenario S5) was also quantified. It showed that under such conditions the employers' payment duties would rise by 21 % at the same time as individual income tax would decrease. Hereby, the health care management would be disengaged from the state budget but it would remain to be labour-market fluctuations sensitive.

Also, the health insurance companies' expenses scenarios were disputed, considering a combination of lower *(15 mill. USD) and higher (150 mill. USD)* World Bank loan and its effective utilisation.

As the results suggest, the only surplus health care management scenario to achieve necessary payback of the residual debts is *Income Scenario S4 (tax base increasing and tax rate decreasing to 11 %)* in conjunction with higher loan. Contrary, the present status *Scenario S1* appears unsustainable even in conjunction with higher loan.

The *Scenario S2* (tax base valorisation) and *Scenario S5* (state excluding) give similar results, and in conjunction with deeper health care reform as was considered in the prognosis or with supplementary state financing might lead *to sustainable character of health care management*.

The optimum and most feasible financing model seems to be the state-insured tax base increasing to the level of minimum (in case of the unemployed to the level of average) nominal wage. At the same time the tax rate, both for employees and state-insured, should decrease from 14 to 11 %. This financing model appears to be equal and securing such amount of money as required to reduce existing unbalances of the health insurance financing (and in the case of the drawdown of external resources to settle them as well).

The *comparative analysis of the EU member-states' health care systems* reveals great mutual diversions. An extensive difference is found in the amount of health care provided within EU obligatory health care system in comparison to the situation in Slovakia. The statutory health care system being too broad constitutes one of the major factors inducing permanent financial problems of Slovak health sector. Seen in this light, the simulation scenarios of Slovakia employing EU states' health care financing systems have to be regarded as conditional and reference.

As follows from the above simulation scenarios, the insurance premium percentages valid in Netherlands or Germany are far less than those in Slovakia. The state budget in the two EU countries carries no burden connected with insurance payments, there being no state-insured citizens. Health care for persons that belong to state-insured in Slovakia is provided on the basis of solidarity or household accounts in the EU countries. However, there are also great

differences in the expenditures of health insurance companies. Only basic health care is financed from the collected insurance premiums. The other health care services are paid for via supplementary insurance funds, municipal authorities or they are paid for by a patient himself in cash.

To think about employing an appropriate health care financing system of any EU country more precisely, a considerable change in the amount of health care provided within statutory health care system in Slovakia is needed.

The system of health insurance in *Great Britain* was analyzed in the part eight. Its development since World War II till present days was focused on from different points of view, containing the reforms of health insurance system in the case of particular governments, their results, changes in the level of medicine science and technology, and using the regulating and control mechanisms. Results of this analysis are summarized in 20 points and they are to be looked at by those who plan to ***reform the health care system in Slovakia.*** The most important are these ones:

- *Hidden over-employment* of the qualified health care staff in Slovakia - it is necessary to increase the intensity of work and reduce the employment rate (for health care sector). It would be advisable to realise it and solve the situation partly by turnover to supplementary health care / social service; partly by fluctuation to the EU countries to prevent the social pressure; and also to achieve other beneficial effects.
- *Health care system integration* (e.g. dissolution of the special one for railways employees).
- The principal barrier to health care reform *is the organisation persistence*. Successful reform should be well prepared, reconsidered, processed, and affecting for longer time period to signify either its consequences or needs of corrections.
- It is necessary to survey the health *care property* and to *reduce it*.
- The progress in mental patient restoration enables significant number of them to *live in public society*; however there is still need to monitor them. Process of re-integration of these patients reduces the burden on health care system and increases employment rate in the *social system*.
- It is necessary to divide the health care system more effectively into *"acute health-care" (first aid)* and *"chronic patient health care"*. A large number of the chronic patients can be relocated to social care. The extension of daily stationeries is needed.
- Slovak health care should actively offer various applicable types of health care, and particularly the spa-bathing care, under adequate conditions and for lucrative prices

to the EU patients.

- It is needed to create a *national computerised health care library* and efficient and secure internet access to health records.
- It is advisable to systematically *address the medicament* testing and validation and its cost regulation.
- It is needed to enforce the *equal status* of the state, public and private health care centres under assorted conditions of their evaluation.
- Both health care and entire society have to adopt a positive policy promoting *healthy lifestyle* and relevant habits.

In general, this work manifested *en bloc* that:

1. If the current financial needs of the Slovak health care system were to be met in the future, it would require excessive state budget expenses and it might *lead to destabilisation of the state financing*.
2. Calculations proved that the current, frequently modified system of health care financing is *deeply dependent on general macroeconomic development*, mainly in the sphere of employment and salaries. This may be resolved by a radical change in the health care financing system or by well-aimed corrections of the current system.
3. An important contribution of this work lies in the provision of variety of alternative health care financing scenarios and quantification of their effects to the Slovak health care system, its income stabilisation and *sufficient independence from the macroeconomic fluctuations*.
4. Such stabilised incomes, in principle at the real level of 1995 - 2000 average, would be close to the *sustainability limit* of the state budget, but for the current health care system they are *insufficient*.
5. For the health care income stabilisation it is necessary for the system to be directly subjected to reform, particularly based on *rationalisation and restructuralisation*.
6. The aim of this work was not to contain only Slovak health care system reform. Its possible alternatives and aspects are constantly discussed in professional circles. In these terms, the contribution of the work is based on *British experience analysis*.
7. The successful health care income stabilisation and the requirement of its reform are to proper pay-off of the accumulated hidden debts, at best from external, foreign funds. *Two scenarios of the World Bank loan* were discussed and quantified, which - combined with insurance system changes, rationalisation and restructuralisation of the health care providers - might lead to resolution to the current Slovak health care system problems.

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