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How did we get here: Hungarian budget 2000–2006

A step towards the comprehensive analysis of budgetary interactions**

Budget is an intricate system. It is quite probable that only few people would immediately comprehend how decreasing the support of pharmaceutical prices could cause the *deterioration* of the budget balance. Still, that is rather likely to happen, as decreasing supports means increasing the consumer prices of medicines, which causes to increase the pensioner price index, which increases the Swiss index, which increases pension-related expenditures. Similarly, at a first glance, it is far from obvious how large an effect the freezing of public sector wages or the lifting of this freezing might make on of the budget deficit, as the effect of rise of gross wages is largely cushioned by a contrary change in tax and contribution revenues, whereas magnified by the increase of pension-related expenditures, the latter being again cushioned by the effect on the indirect tax revenues to some extent.

One basic condition of reforming our budgetary system is to have methods to forecast the effects of different external processes and of the measures of economic and social policy. With our analysis, we do hope to be of help regarding the assessment of the financial significance of different adjustment measures and reform efforts currently on the agenda, while, on the other hand, we intend our analysis to be regarded as a first step towards developing a general framework which is necessary for preparing budgetary impact analyses of a standard higher than those prepared currently.

Within the period of 16 years that has elapsed since the political and economic changes of 1990, it was in 2000 that our GDP-proportionate budgetary deficit was the nearest to the 3% Maastricht threshold, which suggested to us that we should compare the baseline situation in 2006 – that would have happened without the adjustment programme announced in June 2006 – to the budgetary situation in 2000, and attempt to review the history of the budgetary policy over the last few years based on the differences between the GDP-proportionate budgetary items of these two years. Analysing the recent history of Hungarian

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budgetary policy provides several lessons concerning the operation of the major budgetary mechanisms even if in a highly simplified form. The essential, direct aim of our analysis is to identify and to numerically weight the factors of the steep rise of the GDP-proportionate budgetary deficit and its impact mechanisms, preferably separating the impacts dependent on and independent from government measures.

Our analysis falls quite short of perfection in two crucial respects: firstly, we have no access to any macro fiscal models that could consistently tackle each essential impact chain, and, secondly, several data are unavailable in the necessary breakdown. Nevertheless, we think that – on the whole – the resulting outline does enable us to draw vital conclusions. The most we can hope for is that our study is to spark off a constructive debate in wider professional circles regarding the database, methods and conclusions of the analyses of the budgetary policy. The structure of the study is built in the following manner: Part 1 prepares us to carry out our analysis. We outline the most important data and the problems relating to the data, and filter out the one-off effects from the budget balances of the years 2000 and 2006 in order to clarify the real difference to be explained. In Part 2, we provide a detailed analysis of each group of factors, while Part 3 serves to summarise the results. As the most important precondition of any analysis of the budgetary policy is to have access to proper data, we present our own, *unofficial* database for all those interested in a separate Appendix. Naturally, we relied on officially published data wherever possible (as we carefully marked this); however, we are compelled to apply our own methods of approaches at several instances.

PREPARATION OF THE ANALYSIS

In a theoretically clear approach, we ought to have used data corresponding to the *No Policy Change (NPC)* scenario in respect of all budgetary items concerning 2006. We did not succeed in doing so in every case for different reasons. One of the most important inconsistencies originated in the fact that we did not have a detailed NPC based on which it would have been possible to break down the different impacts (e.g.: private vs. public sector GDP). This is partly due to the fact that we do not possess an appropriate macro model which can consistently tackle shifts and changes of such great proportions as yet.

Data and problems concerning the data

Below, we present a detailed account of the data that we used relating to specific areas. Generally speaking, it can be stated that we preferred to use accrual-based data and where such data was unavailable, we attempted to imitate the accrual-based approach by proportioning, on the basis of cash-based data.

The data table below presents important statistical time series, which we used regarding several items.

I. Basic data — **NATIONAL ACCOUNTS** — *(billion HUF)*

	2000	2001	2002	2003	2004	2005	2006
Gross output at basic price							
Companies	22 109.4	24 671.7	26 287.3	28 677.9	31 371.5	33 706.5	36 834.8
Intermediate consumption	13 316.7	14 581.7	14 932.6	16 480.5	17 983.7	19 322.2	21 115.6
GDP at market price	13 532.8	15 274.9	17 203.7	18 935.7	20 712.3	22 025.2	23 561.5
Government sector GDP	1 956.9	2 259.3	2 678.1	3 119.1	3 258.3	3 447.9	3 574.0

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	2000	2001	2002	2003	2004	2005	2006
Private sector GDP	11 575.9	13 015.5	14 525.7	15 816.6	17 453.9	18 577.3	19 987.5
out of which: non-market related activity of households	814.0	830.1	847.4	914.0	1 003.5	1 033.1	1 089.6
GDP at basic price, without the non-market related activity of households	10 749.5	12 349.4	14 032.7	15 316.5	16 646.1	17 832.1	19 293.3
Government sector GDP	1 956.9	2 259.3	2 678.1	3 119.1	3 258.3	3 447.9	3 574.0
GDP at basic price, without the non-market related activity of households	8 792.6	10 090.1	11 354.7	12 197.4	13 387.8	14 384.3	15 719.3

II. Basic data

COMPENSATION OF EMPLOYEES

(billion HUF)

	2000	2001	2002	2003	2004	2005	2006
Compensation of employees	5 832.5	6 853.4	7 775.5	8 663.9	9 500.4	10 171.9	10 844.7
Government sector *	1 415.0	1 690.6	2 098.5	2 488.4	2 614.1	2 772.6	2 827.4
Private sector	4 417.5	5 162.8	5 677.0	6 175.5	6 886.3	7 399.3	8 017.3
Taxes and contributions on labour	2 658.0	3 050.7	3 456.0	3 644.6	3 872.7	4 158.6	4 401.4
Government sector	791.2	797.6	1 063.2	1 156.5	1304.1	1 333.6	1 337.0
Private sector	1 866.8	2 253.1	2 392.9	2 488.1	2 568.6	2 825.0	3 064.3
Contributions paid by employers	1 430.3	1 609.9	1 793.8	1 921.6	2 052.5	2 217.2	2 328.7
Government sector	424.1	413.3	540.7	597.2	678.4	705.3	694.5
Private sector	1 006.2	1 196.6	1 253.0	1 324.4	1 374.1	1 511.9	1 634.2
Revenues from social security contributions	1 097.9	1 226.8	1 364.4	1 508.3	1 624.1	1 773.2	1 925.0
Government sector	328.3	327.2	428.8	489.6	558.3	573.9	596.7
Private sector	769.6	899.6	935.6	1 018.7	1 065.8	1 199.3	1 328.2
Revenues from employer's contributions (Labour market fund)	93.0	109.0	130.5	144.2	155.9	169.9	164.8
Government sector	27.8	29.1	41.0	46.8	53.6	55.0	51.1
Private sector	65.2	79.9	89.5	97.4	102.3	114.9	113.7
Lump sum health care contributions	169.7	179.9	186.6	152.2	150.5	138.1	78.9
Government sector	47.1	38.8	49.3	36.8	39.5	44.4	18.7
Private sector	122.6	141.1	137.3	115.4	111.0	93.7	60.2
Sick leave contributions	13.3	14.4	17.9	21.1	22.2	22.8	19.5
Government sector	4.0	3.8	5.6	6.8	7.6	7.4	6.0
Private sector	9.3	10.6	12.3	14.2	14.5	15.4	13.5
Other contributions	56.4	79.8	94.3	95.9	99.9	1 13.2	140.5
Government sector	16.9	14.4	15.9	17.2	19.4	24.6	21.9
Private sector	39.5	65.5	78.4	78.7	80.5	88.6	118.6
Gross wage income	4 402.2	5 243.5	5 981.7	6 742.3	7 447.9	7 954.7	8 516.0
Government sector	991.0	1 277.3	1 557.7	1 891.2	1 935.7	2 067.4	2 132.9
Private sector	3 411.3	3 966.2	4 424.0	4 851.2	5 512.2	5 887.4	6 383.1
Contributions paid by employees, and personal income tax	1 227.8	1 440.8	1 662.2	1 723.0	1 820.2	1 941.4	2 072.7
Government sector	367.2	384.3	522.4	559.3	625.7	628.3	642.5
Private sector	860.6	1056.5	1139.8	1 163.7	1 194.5	1 313.1	1 430.2
Revenues from employee's contributions to the Labour market fund	42.5	49.8	59.5	46.4	47.8	57.8	50.6

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	2000	2001	2002	2003	2004	2005	2006
Government sector	12.7	13.3	18.7	15.1	16.4	18.7	15.7
Private sector	29.8	36.5	40.8	31.4	31.4	39.1	34.9
Employee's pension and health care contributions (social security)	220.0	259.8	308.4	355.1	405.3	433.9	449.9
Government sector	65.8	69.3	96.9	115.3	139.3	140.4	139.5
Private sector	154.2	190.5	211.5	239.9	266.0	293.5	310.4
Personal income tax	965.2	1 131.3	1 294.4	1 321.5	1 367.1	1 449.7	1 572.3
Government sector	288.6	301.8	406.8	428.9	470.0	469.2	487.4
Private sector	676.6	829.5	887.6	892.5	897.2	980.5	1084.9
*Net wage income (from budget figures) ***	3 174.5	3 802.7	4 319.5	5 019.3	5 627.7	6 013.3	6 443.3
Government sector ***	623.8	892.9	1 035.3	1 331.9	1 310.0	1 439.0	1 490.4
Private sector ****	2 550.7	2 909.7	3 284.2	3 687.4	4 317.7	4 574.3	4 953.0

* Compensation of employees in the government sector, based on National accounts (D.1), concerning 2006: Convergence Programme

**Employees' wages and salaries without personal income tax and contributions

***Employees' wages and salaries, government sector, without personal income tax and contributions

****Employees' wages and salaries, private sector, without personal income tax and contributions

III. Basic data

OTHER INCOMES OF HOUSEHOLDS

(billion HUF)

	2000	2001	2002	2003	2004	2005	2006
Pension expenditures	1 308.2	1 517.8	1 721.4	1 914.1	2 145.4	2 322.2	2 534.4
Family supports	252.6	313.5	346.1	397.9	388.6	406.2	484.0
Housing subsidies	51.9	65.9	89.5	168.4	225.7	273.6	244.6
Other supports	169.9	167.0	316.1	74.0	59.0	49.1	207.5
Porperty income	579.2	574.2	629.3	535.9	668.2	750.0	700.0
Mixed incomes and operating surplus (use of flats by owners)	2 414.6	2 721.5	2 848.4	2 931.8	3 162.9	3 261.9	3 327.1
Other incomes and error (on a residual basis)	–24.7	–40.2	–102.3	31.4	–31.2	485.8	–211.8

IV. Basic data

THE RELATION OF DISPOSABLE INCOMES AND FINAL CONSUMPTION OF HOUSEHOLDS

(billion HUF)

	2000	2001	2002	2003	2004	2005	2006
Disposable incomes (non-adjusted)	7 926.3	9 122.3	10 168.1	11 072.7	12 246.4	13 562.1	13 729.2
Pecuniary disposable incomes (non-adjusted)	7 112.3	8 292.2	9 320.7	10 158.7	11 242.9	12 529.0	12 639.6
Pecuniary private savings	–16.9	83.7	242.9	38.2	483.0	939.6	399.2
Household final consumption expenditure at market price	7 129.2	8 208.5	9 077.8	10 120.5	10 759.9	11 589.4	12 240.4
VAT	1 159.8	1 251.0	1 373.0	1 539.9	1 831.6	1 856.5	1 771.0
Excise duty, consumption tax and vehicle registration tax	513.0	539.2	592.6	662.7	719.2	740.9	848.1
Other taxes on consumption	89.5	102.1	108.6	136.4	178.4	176.4	193.0
Subsidies on products	159.3	181.5	197.2	174.4	203.6	195.2	209.4
Household final consumption expenditure at basic price	5 526.2	6 497.7	7 200.8	7 956.0	8 234.2	9 010.7	9 637.6

V. Basic data **COMPANIES** *(billion HUF)*

	2000	2001	2002	2003	2004	2005	2006
Operating surplus of the business sector	2 902.6	3 166.8	3 815.3	3 967.5	4 336.3	4 831.5	5 327.2
Calculated corporate tax	396.1	425.7	479.2	543.0	499.1	492.6	567.6
Corporate tax allowances	100.4	80.9	82.6	129.3	50.4	62.5	75.6
Corporate tax	295.7	344.8	396.6	413.7	448.7	430.1	492.0

VI. Basic data **NUMBER OF EMPLOYEES AND PENSIONERS** *(thousand people)*

	2000	2001	2002	2003	2004	2005	2006
Employment *	3 856.2	3 868.3	3 870.6	3 921.9	3 900.4	3 901.5	3 885.3
Government sector **	791.4	788.6	800.4	818.7	816.6	805.9	796.1
Private sector **	3 064.8	3 079.7	3 070.2	3 103.2	3 083.8	3 095.6	3 089.2
out of which: employed according to the Hungarian Central Statistical Office ***	1 891.7	1 891.7	1 879.7	1 884.6	1919	1 923.1	1 931.7
Number of pensioners	2 754.0	2 754.0	2 745.0	2 731.0	2 734.0	2 734.0	2 734.0

* Those employed (from 15–74 year-old population)

** Government sector: number of those employed, central budget Private sector: total employment minus employment in the government sector

*** In a publication of the Hungarian Central Statistical Office ("Number and incomes in the national economy") private sector

VII. Basic data **SPECIFIC INDICATORS**

	2000	2001	2002	2003	2004	2005	2006
GDP per employee	2.788	3.192	3.625	3.905	4.268	4.571	4.966
Government sector	2.473	2.865	3.346	3.810	3.990	4.278	4.489
Private sector	2.869	3.276	3.698	3.931	4.341	4.647	5.088
Average gross wage income (from budget figures)	1.512	1.772	2.009	2.209	2.436	2.607	2.791
Government sector	1.788	2.144	2.622	3.039	3.201	3.440	3.552
Private sector	1.441	1.676	1.849	1.990	2.233	2.390	2.595
Average net wage income (from budget figures)	0.823	0.983	1.116	1.280	1.443	1.541	1.658
Government sector	0.788	1.132	1.293	1.627	1.604	1.786	1.872
Private sector	0.832	0.945	1.070	1.188	1.400	1.478	1.603
Average gross earnings (from Hungarian Central Statistical Office), previous year = 100	113.5	118.0	118.3	112.0	106.1	108.8	107.4
Government sector	112.3	122.4	129.2	117.5	100.4	112.8	106.0
Private sector	114.2	116.3	113.3	108.9	109.3	106.9	108.0
Average net earnings (from Hungarian Central Statistical Office), previous year = 100	111.4	116.2	119.6	114.3	105.7	110.1	106.8
Government sector	110.0	119.5	127.5	118.0	101.2	113.7	105.4
Private sector	112.1	115.0	116.0	112.3	108.0	108.4	107.4
Total net earnings (from Hungarian Central Statistical Office), previous year = 100	112.5	116.5	119.7	115.8	106.5	109.9	106.6
Government sector	108.9	119.0	129.4	120.7	99.9	112.3	103.5
Private sector	113.7	115.7	115.2	112.5	109.6	108.7	107.8

VIII. Basic data **PRICE INDICES**

	2000	2001	2002	2003	2004	2005	2006
Consumer price index	9.80%	9.20%	5.30%	4.70%	6.80%	3.60%	3.50%
Pensioner consumer price index	-	-	5.30%	4.60%	7.30%	3.90%	5.00%

We deem it vital to carefully present the data that we used because several differently compiled statistics exist for the variables that are important in respect of the subject matter of our analysis. The reason for this may be data errors as well as differences in sampling techniques. The data on net wages, used in our calculation, significantly differs from what the statistics of the Hungarian Central Statistical Office on headcount and incomes suggest. We assess the significance of this in the Appendix on the data in more detail. In view of data quality, our calculation sometimes fails to be as consistent as the importance of the theory and the subject matter would necessitate it. Nonetheless, it appears to us that we have found the best (or least bad) solution when choosing between alternative statistics. Notwithstanding, naturally, we are open to debates.

Data errors may have a part in the sometimes high values of "other" factors. which appear in relation to explanatory factors and stay partly unexplained.

Regarding 2006, we applied estimates that had been prepared based on different sources of data. Generally speaking, we attempted to present estimates in relation to a case which leaves the introduction of the adjustment package out of consideration.[1] It does result in some inconsistency that the macroeconomic data for 2006 upon which we based our analysis reflect the state of affairs *after* the adjustment measures.

Filtering out one off effects and additionality criterion

Identifying structural problems may be made difficult by the effects of business cycles and different one-off factors. Fortunately, in this case it is not necessary to filter out the effect of business cycles, as the output gaps are identical – with a good approximation – in the two years to be compared, based on the production function based cyclical adjustment method.[2]

We regard the following as one-off effects

- motorway constructions,
- the cancelation of certain claims (e.g. the cancellation of the Iraqi debt in 2006),
- flood-related expenditures exceeding many years' averages,
- increased deficits of local governments which – in general – could be tracked back to election years,
- outstandingly high items due to the peculiar statistical accounting of the purchase of the Gripen fighter planes.

We deem the developmental expenditures prescribed by the so-called additionality criterion similar to the one-off effects. The additionality criterion as a restraint on the budgetary policy, which appeared when Hungary joined the EU in 2004, specifies that Member States shall not use EU funds to substitute for existing developmental expenditures. Based on our calculations, the one-off items and the additionality requirement (or rather, the lack of these) together explain approximately 0.3 percentage point of the GDP-proportionate budget deficit of 2000, while the same effect amounts to 2.6 percentage points in 2006.

As *Table 1* shows, the adjustments concern motorway constructions both in 2006 and 2000. In 2000, the implementation of these projects was still mainly financed by the National Motorway Company (NA Rt.), but

Table 1

ONE-OFF EFFECTS, AND DEVELOPMENTAL EXPENDITURES *(billion HUF)*

	2000	2001	2002	2003	2004	2005	2006
One-off factors, total A	–39.9	–66.4	–365.7	–12.7	–129.0	–220.3	–417.5
Net lending/borrowing of local governments, divergence from the average*	11.3	67.0	–88.1	36.3	27.5	–39.2	–37.0
Net lending/borrowing of by local governments	–38.4	10.9	–151.3	–33.3	–48.6	–120.1	–123.6
Flood-related expenditures, divergence from the average*	–24.9	–8.0	–1.5	15.5	22.3	23.9	–12.5
Expenditures relating to flood protection in the budget	52.9	39.6	37.1	23.6	20.5	21.7	61.3
Construction of motorways, excluding availability fees	–26.3	–125.4	–276.1	–64.5	–178.8	–205.0	–252.2
Cancellation of claims (cancellation of Iraqi debt in 2006)							–40.0
Gripen-related expenditures, exceeding the average							–75.9
Developmental policy.total B	0.0	0.0	0.0	0.0	131.6	147.2	–194.1
Additionality criterion (excluding wage expenditures, agriculture-related items and motorways)					131.6	147.2	–194.1
Total (A+ B)	–39.9	–66.4	–365.7	–12.7	2.6	–73.2	–611.6
ESA-deficit (D)	396.8	627.7	1540.5	1364.9	1337.7	1719.0	2736.4
Adjusted ESA-deficit [= D + (A+ B)]	356.9	561.3	1174.8	1352.3	1340.4	1645.9	2124.8

* Direction of the correction of ESA-95 deficit: + = enhance ESA-95 deficit, – = decrease ESA-95 deficit

as the National Motorway Company belongs to the ESA circle, the 2000 ESA deficit figure includes this item. The expenditures relating to local governments and floods exceeded the average both in 2000 and 2006. However, the Iraqi debt cancellation had no counterpart in 2000. Regarding the Gripen-related expenditures, we divided the total of the payment period between 2001 and 2016 in proportion of "airplane time", i.e. we took into account 7 fighter planes in 2006, and 14 fighter planes per year between 2007 and 2015 (i.e. a total of 133 of them), and found out which amount, evenly paid after these 133 "airplane years" would equal the original total expenditure. We multiplied the figure calculated in this manner by 7 or 14 depending on the year in question. Following this method, we worked out the "actual" (naturally only estimated) service values between 2006 and 2015. We considered the divergences of these from the actual payments to be one-off expenditures.[3]

The additionality criterion means that the EU is examining whether Hungary spent more or less on certain developmental objectives in the years subsequent to the EU accession in comparison with the average of the base period (1999–2001), taking the 2004–2006 average into account. The expenditures considered to be developmental expenditures are shown in *Table 1* in the Appendix. However, to ensure the consistency of our calculations, it is necessary to deduct here the expenses of the construction of motorways since we have already taken them into account among one-off factors. Similarly, it is necessary to deduct wage-type developmental expenditures relevant among additionality criterion as we wish to analyse wages in the government sector separately. Agriculture-related developmental expenditures also need to be deducted as we are going to tackle agriculture-related developmental expenditures within the framework of the budgetary relations established with the EU.

All through the years 2004–2006. the expenses of motorway constructions had a part in increasing the level of the budget deficit, to which it was added the rising of other relevant expenditures in respect of the additionality criterion.

DETAILED ANALYSIS

Let us go through an itemized list of budget revenues and expenditures with significantly changed GDP-proportionate levels in the period 2000–2006. Our starting point for each item was the year 2000 nominal level and we examined the factors that could explain the higher nominal levels in years prior to 2006. Throughout this analysis, we indicate as our reference point (baseline scenario) the extent of nominal increase that could have been facilitated by maintaining the year 2000 GDP-proportionate ratio. Accordingly, data for year 2000 are defined as zero throughout the graphical illustration.

We have simplified budgetary connections to additions and multiplications so as to be able to break down the changes in the items measured as percentages of GDP into additive factors. Wherever the total impact comes as the product of multiplying two or more factors (for example the debt portfolio and the interest rate), the total impact was split in proportion to logarithms.[4] The advantage of this breakdown is that it will be realized as an identity in all cases, therefore it unambiguously and completely distributes the absolute amount of the change (in HUF amount) among product factors; while it does not depend on the sequence of factors (as opposed to the partial effects based approach, where the impact of a single factor is measured at the constancy of the others). However, there is a disadvantage: a meaningful sequence that could rank the different factors in certain cases will thus be ignored. Let us present these relations for those who prefer mathematical formulas to narratives. The following keys are used:

As a key sing[5]:

W:	*households' income (billion HUF)*
w:	*households' income (HUF/prs)*
N:	*headcount (prs)*
T:	*tax revenue*
τ:	*tax rate*
π:	*price index*

Superscript indicates the sector

p:	*private sector*
g:	*government sector*
r:	*retired people*

Subscript indicates the item type

g:	*gross*
n:	*net*
w:	*burdening income from work*
c:	*burdening consumption*
p:	*burdening profit*

Some other keys are identified as they emerge.

Incomes Received From the State

There are three main forms of incomes received from the state: wages of those employed in the government sector[6], subsidies and price supports that increase private individuals' disposable income.

From among subsidies that increase disposable income, pensions (including disability pension) and family support are worth of special attention. Any form of subsidizing medicines, energy, public transport and housing are listed among price supports.

Wages in the Government Sector

INFLUENCING FACTORS

There are two ways of breaking down the per-employee wages paid in the private sector. Firstly, it can be broken down to the product of multiplying the per-employee real added

value by the nominal unit labour cost, or alternatively it can be broken down to the product of multiplying per-employee nominal added value (hereinafter: productivity) by the real unit wage cost (extra intentional wage increase). Since the concept of 'unit wage cost' is more applicable in corporate decision-making, economic analyses tend to prefer this breakdown. Nevertheless, we will use the 'productivity + extra wage rise' breakdown, since we wish to analyse the ratio of budget items to the nominal GDP, rather than the rate of inflation.

Real added value/prs	Real added value/prs	Nominal added value/prs
Nominal unit wage cost	Inflation	
	Real unit labour cost	Real unit labour cost

It is supposed that in case of a long-term stable growth, gross wages in the private sector will follow the nominal added value calculated at basic price, and the relative wages paid in the government sector will adjust to wages paid in the private sector.

Since wages paid in the public sector are based on conscious political decisions, the question of demonstration effect might arise. In our opinion, in the given period, the changes in the wages paid in the private sector cannot be unequivocally interpreted as the demonstration effect of wage increases in the public sector, since:

❶ the rate of wage increases in the government sector was known in advance in each year, still wages in the private sector increased by one or two years' delay only, what is more, it happened together with a streamlining in the public sphere.

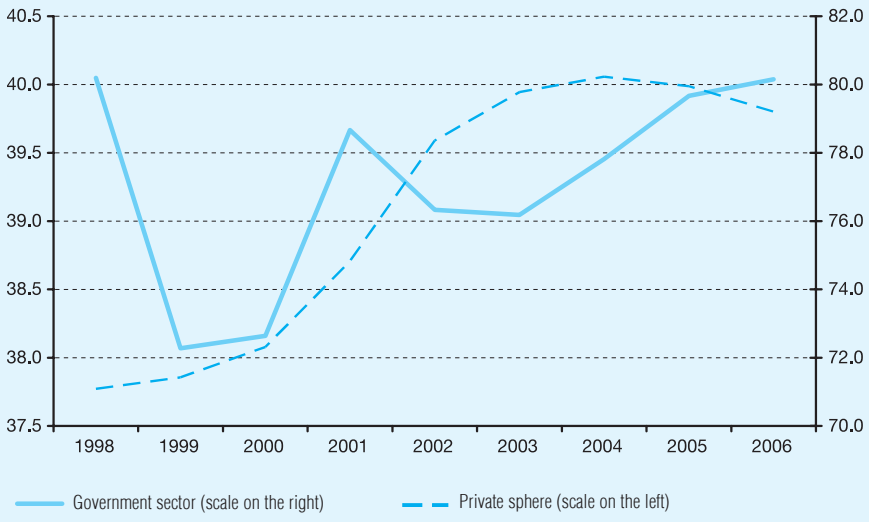
❷ in the 1990s, wages in the public sector significantly lagged behind wages of the private sector (the relative lag of wages hit 30% in the public sector in 2000), so there was no considerable demonstration effect – at least not in the 'slowing' direction.

❸ relative wage changes in neither direction generated significant regrouping of employees.

The *Figure 1* indicates the development of

Figure 1

WAGE SHARE IN PUBLIC AND PRIVATE SPHERES



the employee earnings/nominal added value ratio in the government and private sectors:

The changes in the government sector's net wages are split up into four factors:

- wage rise corresponding to the nominal productivity improvement of the private sector,
- number of employees,
- extra wage rise and
- change in average effective tax and contribution rate on labour income.

As expressed by the formula:

$$W_n^g = (1-\tau_w)\omega_x^g N^g \eta w_{g,2000}^g$$

where

W_n^g: net wage expenditures in the government sector,

τ_w: effective average tax and contribution rate on labour income,

ω_x^g: government wage increase above the private sector's productivity (2000=100),

N^g: number of employees in the government sector,

η: per-employee nominal added value without the non-market activity of households in the private sector (nominal GDP/employee without non-market activity of households calculated at basic price, 2000=100),

$w_{g.2000}^g$: average gross wage income in the government sector in 2000.

Findings

Figure 2 indicates that the per-employee growth of nominal added value calculated at basic price in the private sector exceeded the pace of GDP growth counted at market price.

The government increased the wages of civil servants in 2001 and in 2003, and those of the public servants in 2002 and in 2003 by a rate that significantly exceeded the private sector's productivity increase. There was a slight correction of it in 2004, thus the cumulative effect reached HUF 113 billion or 0.5% of the GDP by 2006.

The growth in the number of the public sphere's employees was considerable in 2002-2003, but the former excess practically vanished in the period 2004–2006 (prior to the announcement of the lay-off measures in the adjustment package of 2006), and thus the impact of the increase in the government sector headcount in the deficit surplus that emerged by 2006 is negligible.

Tax and contribution cuts played the most important role in the growth of the GDP-proportionate net wage expenditure in the government sector. The resulting loss in the central budget's income was nearing HUF 180 billion or 0.8% of the GDP in 2006.[7]

Pensions

Influencing factors

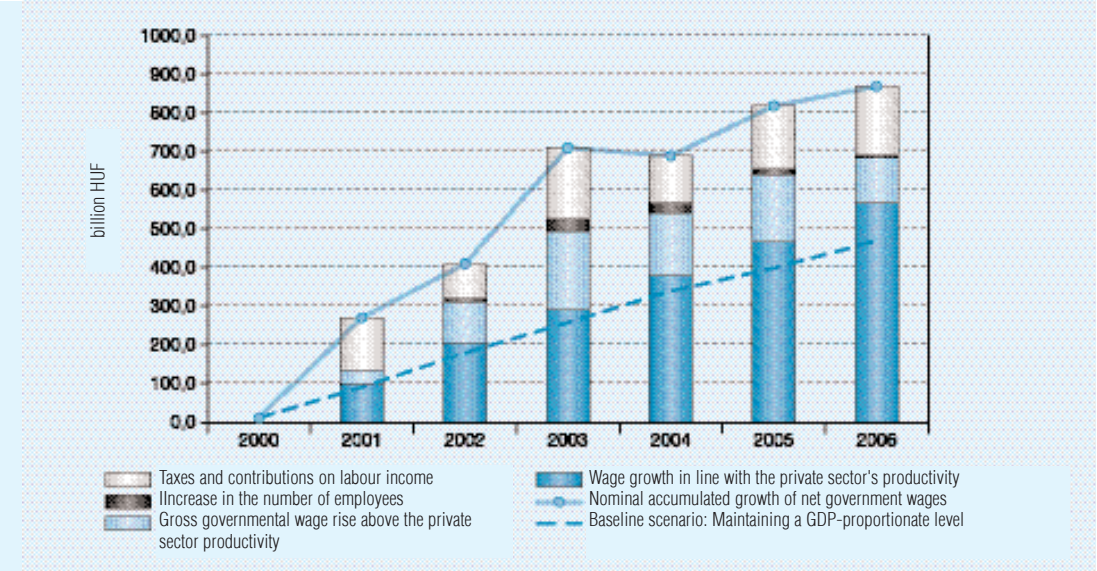
Any change in pensions is chiefly determined by the 'Swiss indexing', which contains half of the national economy-level average of net wage rises and half of pensioners' consumer price index.[8] Net wages obviously contain the wages of both the private and the public sectors; as a result, their increase by more than the nominal GDP also lifts the GDP-proportionate level of pensions-related expenditure. Lacking certain data and an adequate model, in a considerably simplified manner, we regard inflation here as an external condition: therefore the impact of wages, taxes and administrative prices on inflation pensions are not analysed.

There were multiple instances of pension increases exceeding the Swiss index in the period under review. In 2002, a HUF 19.000 amount paid for each pensioner directly increased pensions-related expenditure, but that was only a one-off bonus, thus it did not directly impact the deficit in 2006.[9] However, the 'extraordinary' increases in pensions carried out in 2001 and in 2002 were included in the base of the subsequent years, and in the four years between 2003 and 2006 the '13th-month pensions' gradually emerged: instead of the ear-

Figure 2

CHANGES IN NET WAGES IN THE GOVERNMENT SECTOR

Nominal accumulated growth compared to the year 2000 level



Note: see Appendix C for exact data

lier 52 weeks of pension, retired people received it for 53 weeks in 2003, for 54 weeks in 2004, for 55 weeks in 2005, and for 56 weeks beginning from 2006.

The number of pensioners slightly reduced in the six years under review, but the 'rotational effect' – the main point of which is that the pensions of the deceased are considerably lower on the average than those of the freshly retired ones – significantly lifted this expenditure.

The following formula specifies the range of expenditures relating to pensions:

$$W^r = N^r \omega_S^r \omega_{13}^r \omega_{pol}^r \omega_c^r w_{2000}^r + W_{X,2002}^r$$

$$\omega_S^r = \frac{\left[\frac{N^g}{N^g+N^p}\frac{w_g^g}{\eta} + \left(1-\frac{N^g}{N^g+N^p}\right)\frac{w_g^p}{\eta}\right](1-\tau_w)\eta + \pi^r}{2}$$

where

W^r: total pension payment,

$W_{x.2002}^r$:one-off bonus of HUF 19.000 in 2002,

w_{g2000}^r: average pension in 2000,

w_g^g: Average gross earnings in the public sphere,

w_g^p: Average gross earnings in the private sphere,

N^g: number of employees in the public sphere,

N^p: number of employees in the private sphere,

N^r: number of pensioners,

ω_S^r: Swiss index,

ω_{13}^r: impact of introducing 13th-month pension,

ω_{spec}^r: impact of (extraordinary) raises to be built into the base, above the Swiss index,

ω_c^r: rotational effect (as a residue),

π^r: pensioners' consumer price index,

τ_w: average tax and contribution rate on labour income.

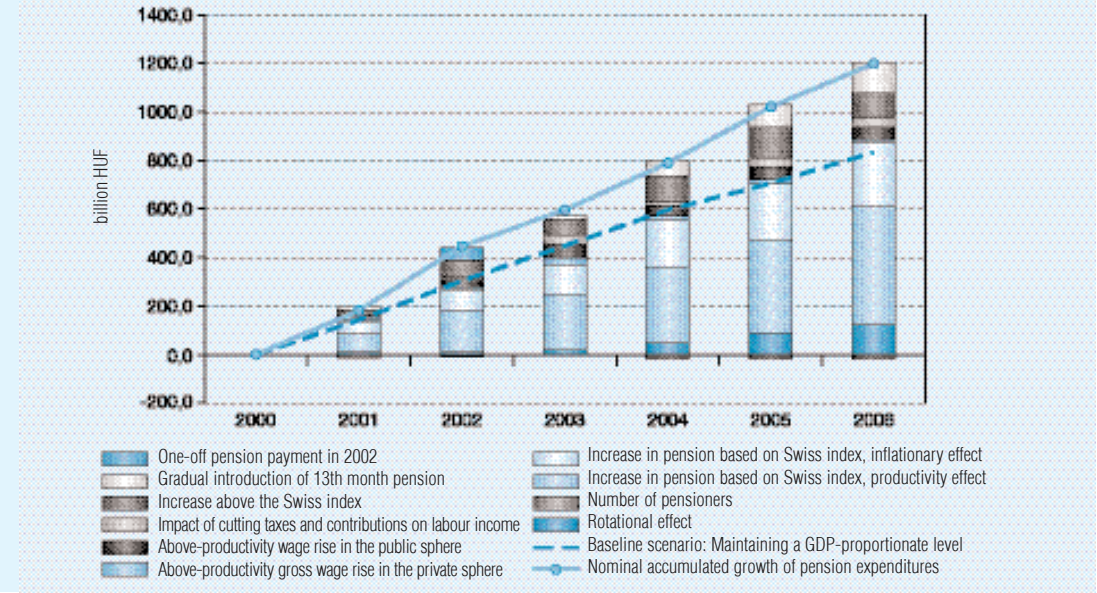
Findings

The ratio of pensions-related expenditure to the GDP increased by about 1.5 percentage

Figure 3

EXPENDITURE RELATING TO PENSIONS

Nominal accumulated growth compared to the year 2000 level



Note: see Appendix C for exact data

points in the period under review. *Figure 3* illustrates that this rate would have returned to the level seen in 2000, if both the public and the private sectors had increased wages just at the rate that is justifiable by productivity and if both inflation and the rotational effect actually changed as observed (i.e.: ignoring the effect of extra wage rises on inflation and on newly retired people's pension) and if there had been no extraordinary increases in pensions.

At this point, the number of pensioners did not pay a significant role (reducing impact is –0.1 percentage points) and the impact of the extra wage increase in the private sector was also below 0.1 percentage points.

The government's measures almost wholly explain the rise in GDP-proportionate expenditures relating to pensions: cutting taxes and contributions on labour income a (0.1 percentage points), the extra increase in the governmental wages (0.2 percentage points), lifting pensions above the rate of the Swiss index (0.5 percentage points) and introducing the 13th month pension (0.5 percentage points).

When selecting the calculation method, the interaction of the political measures and the exogenous factors should be taken into account (for example, the effect of the 13th month pension is based on a higher pension level because until 2002 there were higher rises than the obligatory one in line with the Swiss index). The impact of the 13th month pension appears to be much smaller than the amount paid in 2006 under this appropriation (HUF 170 billion), which is the result of the fact that the base of the 13th month pension was increased not just by Swiss indexing but also by extraordinary increases as well as by the rotational effect. At this point, the usage of the logarithmic breakdown that ignores the sequence of events, is debatable, since theoretically politics was aware of the characteristics of the pension system (the majority of rises beyond the Swiss index took place before 2002 and the rotational effect is

also a well-known fact), when decided to introduce the 13th month pension. The viewpoint that in 2006 the total amount paid for the 13th month pensions was a consequence of the measure to introduce the 13th month pension can be defended accordingly.

Wage increases and reducing tax and contribution rate on labour income in the public sphere lift the Swiss index through the net wages and thus they increase pensions, too. We assumed that extraordinary increases *above* the Swiss index that are based on political decisions would not have been smaller if net wages had increased slower. In other words, our starting point was that politics wanted to improve the position of retired people against net wage increase by a fixed-percentage rise. That is to say the stronger the net wage increase is, the higher this extra pension rise, based on political decision is. This solution is reasonable because in the political public discourse, pensions are most frequently compared with current wage increases, and factors beyond the wage increase are not analyzed.

As we have indicated earlier, we could not give a sufficiently deep analysis of economic policy's impacts on inflation. Nevertheless, we have prepared an estimate to what extent the government's measures affected pensions-related expenditures through the Swiss index's inflation component, abstracting from the effect of wages on inflation. Because of administrative price increases after 2000 and tax measures after 2004, the extra inflation lifted pensions-related expenditures by HUF 24 billion in 2006. *(See Table 2)*

Please note that our calculations indicate the gross impact of politically motivated increases in pensions on budgetary expenditures. Because of the higher disposable income due to increased pensions, and the resulting extra consumption and extra tax-revenue, the decisions' impact on the deficit is smaller than shown above. Our analysis into consumption taxes tackles this correlation in detail.

Family supports

Influencing factors

In the period under review, the central budget subsidized families through the tax allowances available for families in the personal income system, and in the form of direct family support payments (family allowance, maternity allowance, child benefit etc.). The total subsidy is the sum of these two.

Findings

As indicated in *Figure 4*, it was the growth in personal income tax allowances for families in 2001–2002 that resulted in the increase in family supports' GDP-proportionate level. However, it was the new government that lifted the amount of family allowance in 2003. The total amount of family supports reduced in 2004 and it remained steady GDP-proportionately in 2005, but it grew again in 2006 as a result of the intensive rise in

Table 2

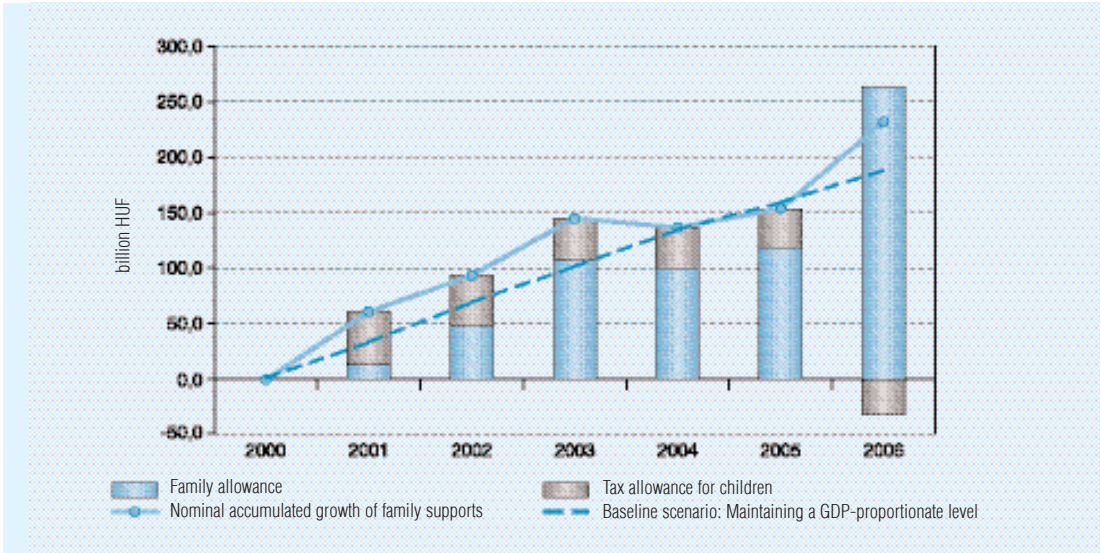
IMPACT OF INFLATION

	2001	2002	2003	2004	2005	2006
Impact of inflation, annual	52.6	35.2	36.8	63.7	37.3	39.2
market	52.4	34.8	36.4	33.8	26.3	57.1
state measures, direct impact	0.2	0.4	0.4	29.9	11.0	–17.9
Impact of inflation, cumulated	52.6	87.8	124.6	188.3	225.6	264.8
market	52.4	87.2	123.6	157.4	183.8	240.9
state measures, direct impact	0.2	0.6	0.9	30.8	41.8	23.9

Figure 4

CHANGES IN FAMILY SUPPORTS

Nominal accumulated growth compared to the year 2000 level



Note: see Appendix C for exact data

family allowance, which increase surpassed the amount of the practically ceased tax allowance. There was a nearly 0.2-percentage-point growth in the GDP-proportionate amount of family supports in the six years under review.

Drug subsidies

Influencing factors

The budget's expenditures under drug subsidy[10] depend on both the nominal value of drugs purchased by people (pharmaceutical consumption) and on the rate of subsidy within that. Unfortunately we could not analyze three important effects: the shift in pharmaceutical consumption in favour of imported pharmaceuticals, the price increase of imported pharmaceuticals and the impact of the state (national health insurance) regulation of drug prescription on the demand.

We refer – without showing data – only to the fact that pharmaceutical prices grew above the rate of inflation in this period, which lifted the nominal value of pharmaceutical consumption, whereas no significant volume increase was observed based on the data available (e.g. number of packets). It seems that the reason for the rise seen in average prices is chiefly not the *producer* price of the medicines produced in Hungary, but the increase in the weight of imported pharmaceuticals and their higher price that follows the HUF exchange rate.

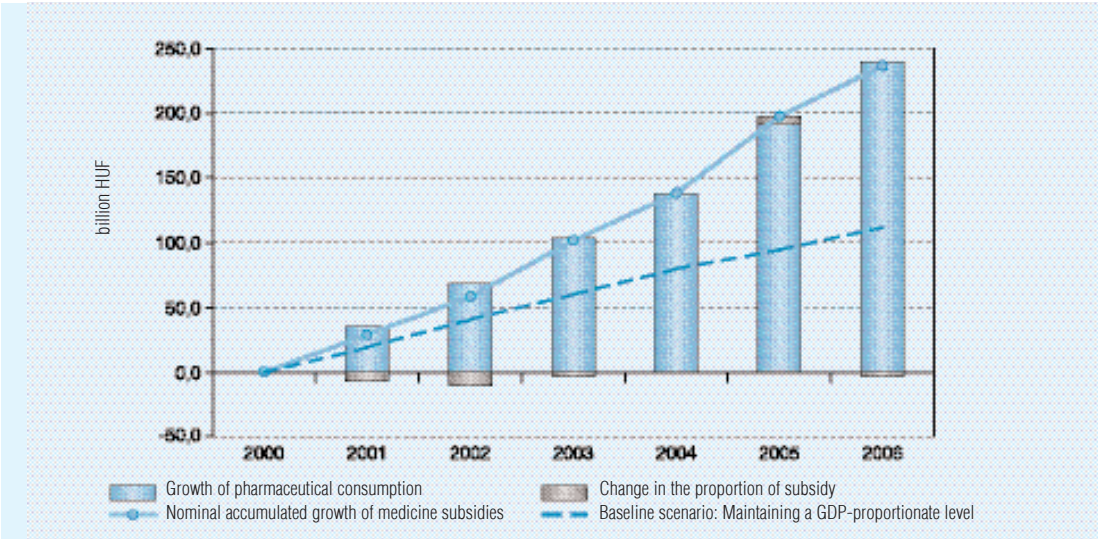
Findings

The state's GDP-proportionate pharmaceutical expenditures increased by 0.5 percentage points by 2006. *(See: Figure 5)* Basically, it was the higher total pharmaceutical consumption expenditure that augmented the central budget's pharmaceutical expenditure, rather than an increase in the rate of state subsidies. There seemed to be savings in state subsidies at the beginning of this period, and then in 2006 – according to the forecast prepared prior to the adjustment programme announced in the summer – slight savings re-appeared. More significant savings on state subsidies could have been realized only if the state had gradually quitted the support of pharmaceuticals' consumption,

Figure 5

DRUG SUBSIDY

Nominal accumulated growth compared to the year 2000 level



Note: see Appendix C for exact data

which would have slowed down the growth of the quantity purchased through an increase in the consumer price, resulting in additional budgetary savings.

Housing subsidy expenditures

Influencing factors

Between 2000 and 2006, the government granted housing subsidies under as many as 21 titles. For a better understanding, these titles are grouped into three categories.

❶ Subsidies with significant lagging effects

There is certain inertia in the growth of the expenditures, as the budget is burdened by serious past commitments.

Types: loan interest subsidies for the purchase of new or second-hand homes, for local government loans related to water utilities and home renovations, and subsidies for building society savings.

❷ Subsidies without significant lagging effects

In principle, the government would be able to terminate these subsidies in any year.

Types: social housing subsidy for building a home, young people's home building support, tax refund subsidy, panel block reconstruction subsidy, subsidy to physically disabled people, personal income tax allowance on housing loan repayments.[11]

❸ Subsidy forms ending in the examined period

The GDP-proportionate increase in subsidies of category 2 is fully attributed to government intention in the period. The decrease in payments in category 3 was an external condition in the period from 2000 to 2006, as the subsidy forms of this category were terminated as a result of earlier decisions.

Category 1 shows a mixed picture, as it was partly influenced by government decisions, but the burden of debt stock accumulated earlier or exogenously is also significant, and this is influenced by the effects of the development of the interest rates (monetary policy).

The development of the annual amounts of the various housing subsidies in HUF between 2000 and 2006 is determined by the following simple formula:

$$H = \sum H_s + \left(T_H^- + \sum H_i\right) + \sum H_{out}$$

where

H: housing subsidies,

H_s: subsidies with significant spreading effects,

T_H^-: personal income tax benefit on housing loan repayments,

H_i: subsidies without significant spreading effects,

H_{out}: expiring subsidies,

RESULTS

Category 1 increased the deficit by 0.6 percentage points and category 2 increased it by 0.1 percentage points, while category 3 caused a decrease of 0.1 percentage points. *(See Figure 6)*

With unchanged interest rates, the increase in category 1 would have been even higher, 0.1 percentage points. According to our calculations (see appendix C), within the GDP-proportionate 0.6 percentage point increase in expenditures, at least 0.2 percentage points can be attributed to the increased generosity of the system after 2000, so the conditions existing in 2000 and the changes in the interest rates determined a growth of maximum 0.5 percentage points.

Other subsidies

INFLUENCING FACTORS

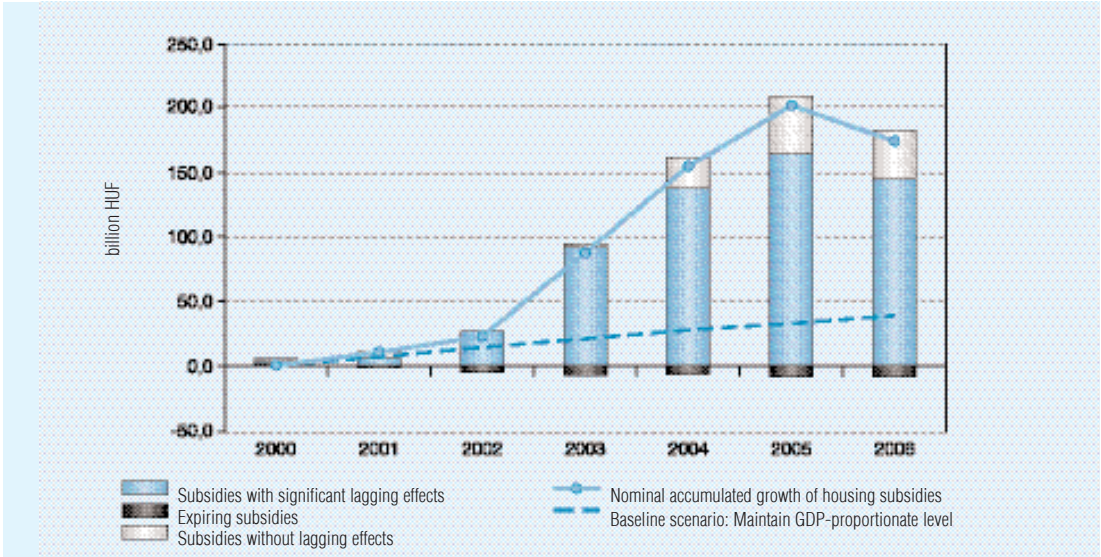
The scope of other subsidies includes the subsidy system of household energy (gas and electricity) and railway public transport.[12] The state support given to these services includes the quasi-fiscal activity of the service companies (MOL, MVM and MÁV)[13], too, in addition to the direct budgetary subsidies extended to them.

For the purposes of this analysis, quasi-fiscal activities are the relative losses suffered by state-owned companies operating outside the government sector, as a result of the regulation of the prices by the government. The involvement in this kind of operation does not necessarily mean that the given economical entity is constantly loss-making, i.e. this operation can

Figure 6

HOUSING SUBSIDY

Nominal accumulated growth compared to the year 2000 level



Note: see Appendix C for exact data

be maintained, and, in principle, be continued on the long term, too. A good example for this is MOL, which suffered significant losses because of the subsidy of household gas prices at the beginning of the 2000's, but because of their other revenues, it was able either to suffer a smaller loss, or to gain a significant profit (not independently of the low level of the state mining tax, which may facilitate a significant profit). MVM is able to partially or fully counterbalance the loss from the government price regulation with the low prices of the nuclear power plant in Hungarian ownership, but in the case of the foreign power plants, the existing contracts do not make this possible, or to a small extent only. In the case of the MÁV, the expenses of passenger transport not paid by the government are counterbalanced to some extent by the profit generated (or at least accounted) in the cargo branch.

If the company is owned by the government partly only, then only the loss on the part owned by the state is to be considered as a quasi-fiscal activity, because the loss on the part owned by private parties is to be interpreted as implicit tax as a revenue financing the state subsidy of the population.[14] However, this "revenue" or saving is reduced by the debt assumption or capitalization of the company from time to time. The difference between the total state subsidy and the loss transferred to private owners as savings (or "income") will burden the budget (increase the deficit) in a given year.

The budgetary effects of the state subsidies on the service provided by company *i* are explained below:

$$W_n^i = W_b^i - T^i = W_b^i - \left(S^i - W_d^i\right)$$

where

W_n^i: the net state subsidy on the service extended by company *i* (appropriated in the budget),

W_b^i: the total state subsidy on the service provided by company *i* (consumer prices subsidy, subsidy to producers and the operating loss of the company),

T^i: the budgetary savings related to the service extended by company i,

S^i: the private owners' loss in company *i* that can be attributed to the government price regulation + "payment into the budget under special titles",

W_d^i: capital allocated to company *i* (including debts assumption).

For the financing of the retail gas price subsidy, the budget started to collect a special mining tax from MOL in 2003, which is interpreted as "payment into the budget under special title". The state gas price subsidy granted to the customers was the loss of the MOL gas branch (in 2001–2002) and the amount paid by the government directly to subsidize the price of gas (from the so-called energy management fund created in 2003). The government savings achieved in connection with the gas price subsidy is a loss forced on the private owners of the company – as a kind of tax – in 2001–2002, as well as the company's payment to the energy management fund since 2003.

Results

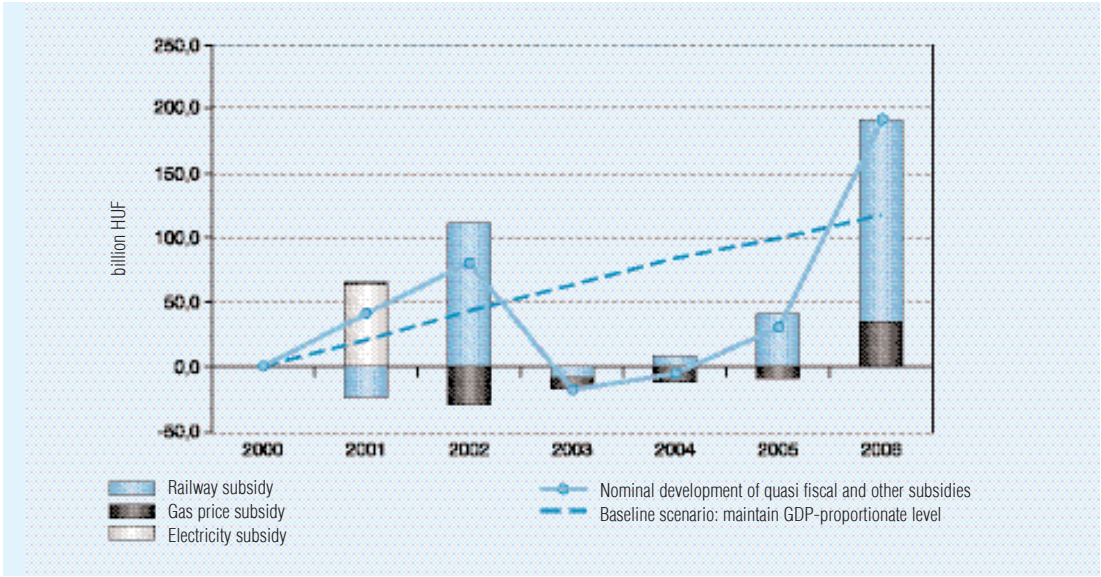
It is probably surprising, that in our calculations, the gas price subsidy was not a net subsidy at the beginning of the period, because it was possible to finance the low prices from the operating loss of MOL (by debiting the loss against the profit due to the private owners of MOL). The main reason for the significant gas price subsidy deficit of 2006 was the increase in the price of imported gas, which was not compensated by the inpayment obligation of the MOL. *(See Figure 7)*

The subsidy on the price of electric energy contributed to the budget deficit significantly in 2001 only, when the goverment had to capitalize the MVM, after the loss of the capital of the firm as a consequence of price regulation.[15]

Figure 7

OTHER SUBSIDIES

Nominal accumulated growth compared to the year 2000 level



Note: see Appendix C for exact data

The state subsidy to the railways appeared mainly in 2002, when the budget assumed a debt of over HUF 100 billion from the company, but the government subsidies were significant in 2005 and 2006, too, in the form of the increased direct subsidy.

Tax revenues from the private sector

The analysis of the taxation system should consider the fact that the increase in government wages was calculated in net, so it is only the amount of taxes and other contributions paid in the private sector that have to be analysed here. Some of the tax benefits (housing and family subsidies) were discussed earlier, so we will not take them into consideration here. For the sake of simplicity, the simplified business tax ("eva") will be treated completely as a tax on consumption. We do not undertake the estimation and impact analysis of the taxation morals and the efficiency of tax collection.

Corporate tax

Influencing factors

The development of the corporate tax is divided into the effects of four factors: the development of the tax base (gross operating profit of the corporate sector), the changes in the tax rates (and some other taxation rules, e.g. whether the local business tax can be deducted), the introduction of the special tax of loan institutions and financial businesses, and the reduction of tax benefits.

The fact that the tax base increased by a different amount than the GDP is considered as an external factor. The development of tax benefits is rather an external factor, as they depend on the decisions of the companies and the government, too, but the majority of government measures to introduce benefits were taken before the examined period.

$$T_{pn} = T_{pnc} + T_{pnf} + T_{pn6} = GDP\ (\frac{S}{GDP})\frac{T_{pgc} - T_{p}^{-}}{T_{pgc}}\tau_{p}\ O_{p} + T_{pnf} + T_{pn6}$$

where

GDP nominal GDP,
S: gross operating profit of corporate sector,
T_{pn}: net corporate tax,
T_{pg}: gross corporate tax,
T_{pnc}: adjusted net corporate tax (net corporate tax without the special tax of loan institutions and financial businesses and without the effect of the changes in the taxation system in 2006),
T_{pgc}: adjusted gross corporate tax (net corporate tax without the special tax of loan institutions and financial businesses and without the effect of the changes in the tax system of in 2006),
T_{pnf}: special tax of loan institutions and financial businesses, net,
T_{pn6}: effect of changes in taxation in 2006, net (expert's calculation for the following changes in taxation rules: possibility to write off a part of the local business tax, its VAT effects, changes in depreciation, introduction of rate of 10% for SMEs),
$\overline{T_p}$: tax benefits in the narrow sense,
τ_p : corporate tax rate in the law,
O_p: other effects and residual.

Results

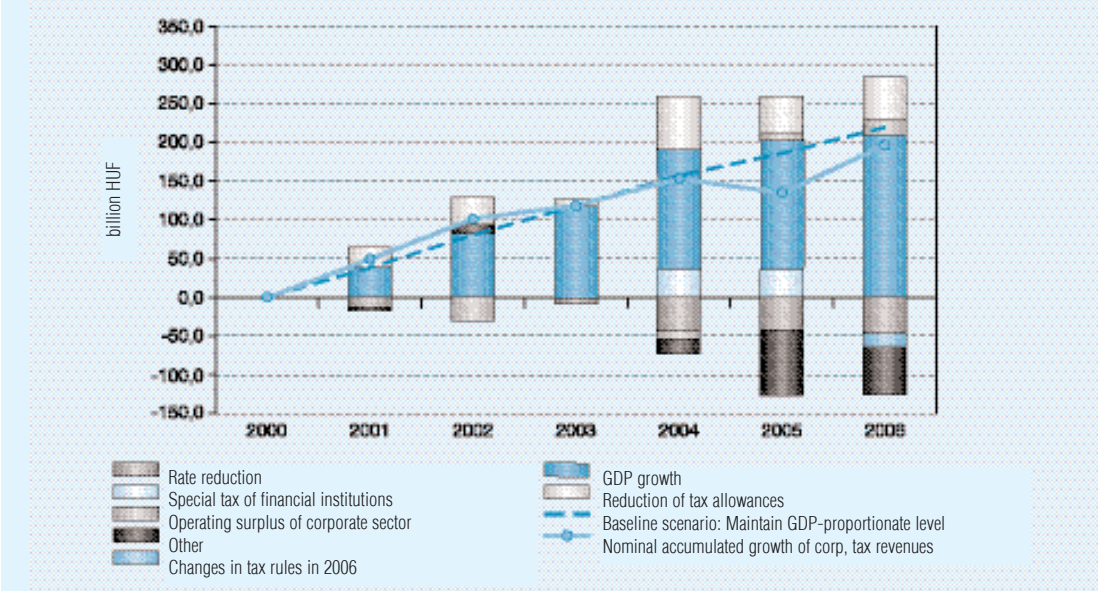
The GDP-proportionate corporate tax revenues were reduced by the changes in the corporate taxation rules (primarily by the reduction of the rate) and the changes in other taxation rules (+0.3 percentage point). *(See Figure 8)* On the other hand, the revenues were increased by the introduction of the special tax of loan institutions and financial businesses (–0.2 percentage point), and the reduction of the tax benefits (–0.2 percentage points).

It seems that the revenues were increased by the growth of the tax base that was higher than the growth of GDP (–0.1 percentage point), but were reduced by other factors (+0.3 percentage point).[16]

Figure 8

CORPORATE TAX REVENUES

Nominal accumulated growth compared to the year 2000 level



Note: see Appendix C for the exact data

Personal income tax

INFLUENCING FACTORS

We adjusted personal income tax revenues with those components not related to wages and salaries.[17] The growth of this adjusted personal income tax revenues were influenced by the productivity of the private sphere, the wage raises over the productivity, the number of people employed by the private sector, the effective tax rates[18] and the tax benefits. From the tax benefits, two items have to be highlighted: one of them is the pension contribution benefit that existed at the beginning of the period, but was terminated at the very end of it, and the other is the tax credit, which grew significantly in 2003. These changes should definitely be considered as government decisions. The family tax allowance and the tax benefit on housing loans repayment were already discussed in the chapter dealing with the incomes received from the state, so they are ignored here, and other factors influencing the tax benefits are not considered, either.

$$T^{p}_{PI,n} = T^{p}_{PI,n,2000}\ \eta\ \left(\frac{w_g^{\ p}}{\eta}\right) N^{p}\ \frac{T^{p}_{PI,n}}{T^{p}_{PI,g}}\ \tau_{PI}\ O_{PI}^{\ p}$$

$$T^{p}_{PI,n} = T^{p}_{PI,g} - T^{p}_{PI,-}$$

where

$T^{p}_{PI.g}$: gross personal income tax revenue from the private sector,

$T^{p}_{PI.-}$: narrow scope of tax benefits,

$T^{p}_{PI..n.2000}$: $T^{p}_{PI..n}$ in 2000,

τ_{PI}: personal income tax average rate,

O^{p}_{PI}: residual, other effects.

RESULTS

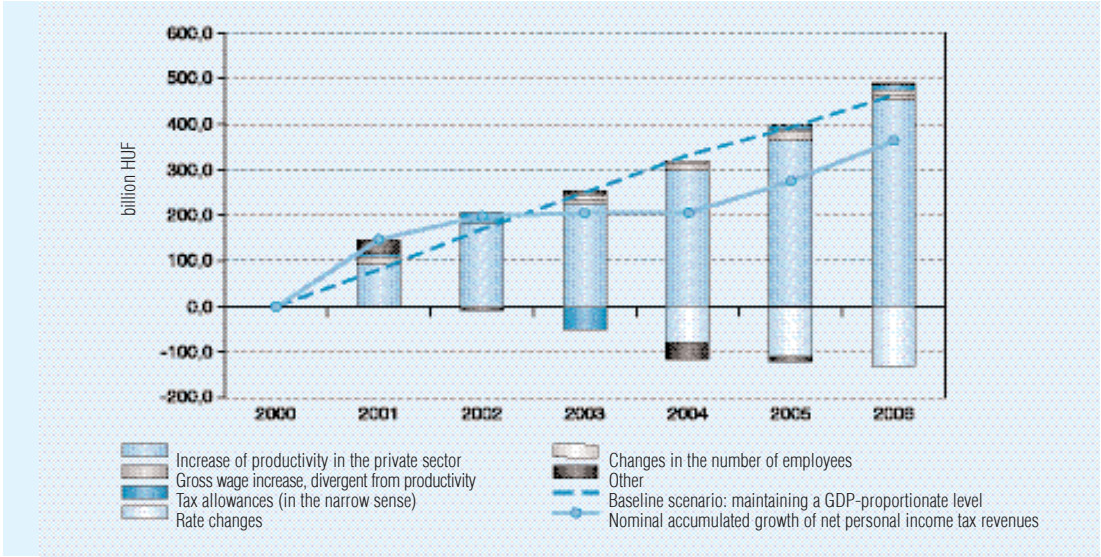
The GDP-proportionate deficit has been diminished by –0.1 percentage point due to the wage growth above productivity and increases in the number of employees in the private sector, increased by +0.6 percentage point due to the decrease of the effective tax rate, and decreased by the reduction of tax allowances by –0.1 percentage point (at the end of the period).

The GDP-proportionate net personal income

Figure 9

PERSONAL INCOME TAX

Nominal accumulated growth compared to the year 2000 level



Please note: The exact data is to be found in Appendix C

tax revenues grew in 2001, and then dropped back due to an upsurge of tax allowances in 2002–2004. Their dropping back halted in 2005. However, in 2006 the decrease of the net revenues continued because of the rate cut, only partly counterbalanced by the widening of the tax base, i.e. the decreasing of allowances.

Contributions

INFLUENCING FACTORS

Changes in contribution revenues were influenced by the productivity of the private sector, the gross wage increases above productivity in the private sector, the changes in the contribution rates, and the growing membership of private pension funds. The increase of the rate of employee's social security contribution paid into the state pension insurance fund did compensate for the increased rate of the contribution paid by private fund members into private pension funds in 2003 and 2004. (In 2003, the employee's pension contribution was increased by 0.5 percentage point, and in 2004 the health care contribution by 1 percentage point.) We did not undertake to carry out an impact analysis of the withdrawal of the upper limit of payment per employee into health fund in 2001. We consider the whole of the factor labelled other to be exogenous (not a result of government's decision).

The algebraic relation below represents the highlighted factors:

$$T_S = \sum T_{Si}^{p} = \sum \eta \left(\frac{w_g^{\,p}}{\eta}\right) N^{p} \tau_{si} R^{PP} O_{si}^{\,p}$$

where

T_S: total revenues from contributions,

T_{Si}^{p}: i contribution revenues from the private sector (with the exception of the employee's social security contribution),

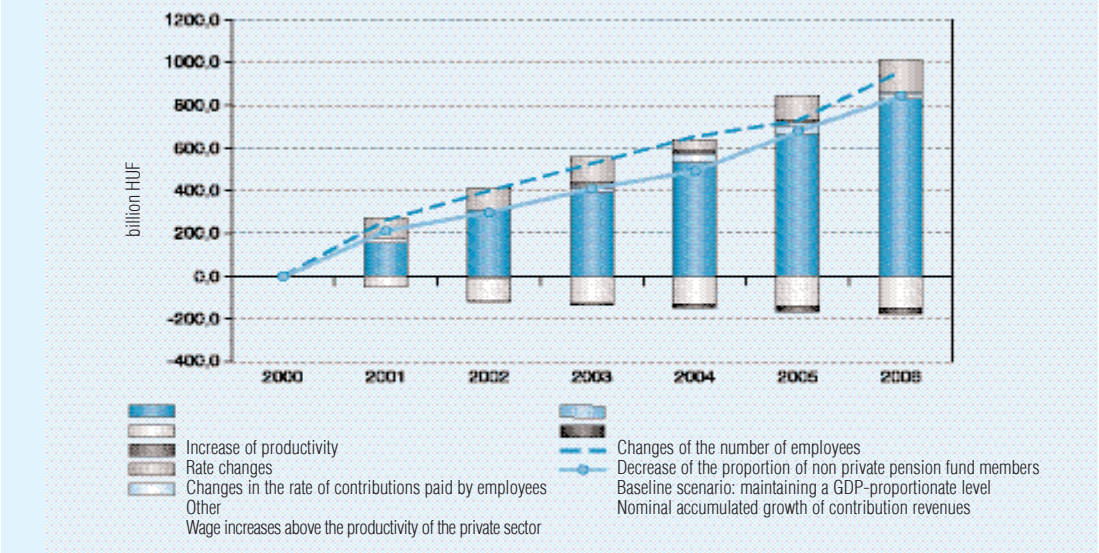
τ_{Si}: contribution rate for i contribution,

R^{PP}: if i is contribution paid by employees then it is the proportion of those who are not members of private funds, 2000 = 100, if is not contribution paid by employees then it is 1,

Figure 10

CONTRIBUTION REVENUES

Nominal accumulated growth compared to the year 2000 level



Please note: The exact data is to be found in Appendix C

O^{p}_{Si} : the effect of other factors, residual, 2000 = 100.

RESULTS

The deficit was diminished by wage increases above productivity (–0.1 percentage point) and by the increase of employee's rates (–0.1 percentage point); whereas it was increased by the decrease of employer's rates (+0.6 percentage point) and by the increasing size of the membership of private pension funds (+0.1 percentage point).

Private pension funds caused to increase the ESA deficit by 0.6 percentage point in 2000 and 1.5 percentage points in 2006, which means that they contributed 0.9 percentage point to the deficit in the period that we examined. Yet, our calculations suggests that the effect of private funds is significantly smaller than that. The reason is that – as it has already been mentioned – in the meantime, the loss was partly compensated for by the increase of the employee's contribution to be paid into the state social security funds, and our calculation quantifies the net effect that was smaller because of this rate increases.

Unrealised contribution revenues due to the decrease of (employer's) contribution rates amounted to 209 billion HUF. Out of that, 64 billion HUF was related to the wages of those employed in the government sector, so the effect of the rate cuts truly affecting the budget balance amounted to 145 billion HUF.

"Other" factors have a significant positive value (decreasing deficit by –0.6 percentage point).

Lump sum health care contribution

INFLUENCING FACTORS

Changes concerning the lump sum health care contribution (eho) from the private sector are due to changes in the flat rate of the contribution itself and in the number employed in the private sector.

$$T^{p}_{eho} = N^{p} \tau_{eho} O_{eho}$$

where

T^{p}_{eho} : total revenues from lump sum health care contribution paid by the private sector,

τ_{ebo} : per employee value of lump sum health care contribution,

N_{ebo}: number employed in private sector,

O_{ebo}: residual, other effects.

RESULT

The GDP-proportionate deficit was increased by +0.7 percentage point by decreasing the flat rate health care contribution, while it was practically unaffected by changes in the employment figures. The extent of the increase of the amount of the flat rate health care contribution fell behind the pace of growth of the nominal GDP each year. *(See Figure 11)*

VAT

INFLUENCING FACTORS

The most important factors influencing VAT:

- the effects increasing disposable incomes in comparison with the basic scenario,
- the shift in the consumption structure towards standard VAT rate products, and
- the rate changes.

Disposable incomes were diverted from the baseline by the measures of the governments analysed and quantified above and by the increase of the wage share of the private sector. The nominal growth of VAT revenues generated due to higher disposable incomes must be divided in the proportion of the relative size of the factors that influenced disposable income.

$$T_V = T_V^{PC} + T_{V,0}^{PC} + T_V^{G} + T_V^{FI} + T_V^{O} =$$

$$= W_C \frac{W}{W_{\cdot}} (1-s) C_{struk} \tau_V O_V + T_V^{G} + T_V^{FI} + T_V^{O}$$

where

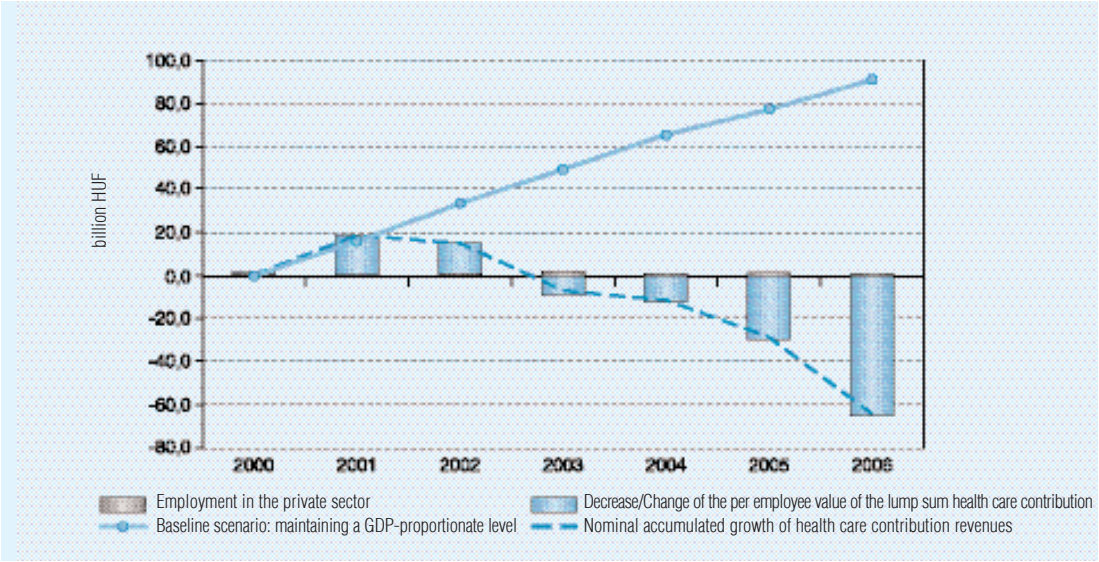
T_V: sum of net VAT and simplified entrepreneurial tax revenues

T_V^{PC}: VAT of household final consumption

Figure 11

LUMP SUM HEALTH CARE CONTRIBUTION

Nominal accumulated growth compared to the year 2000 level



Please note: The exact data is to be found in Appendix C

expenditure and households' investments,

$T^{PC}_{V.0}$: VAT of household final consumption expenditure and households' investments in 2000,

T^{G}_{V}: VAT paid by the government sector,

T^{FI}_{V}: VAT paid by financial institutions,

T^{O}_{V}: other VAT,

W: disposable incomes,

W_C: disposable incomes adjusted by deducting the effects of government measures influencing disposable incomes and of the increase of the wage share of the private sector,

s: net lending of households (in proportion of disposable incomes),

C_{struk}: the effect of the shift in the consumption structure on the effective VAT rate, 2000 = 100,

τ_v: the effect of the change of the VAT rate and reclassifications on the effective VAT rate, 2000 = 100,

O_V: residual, other effects, 2000 = 100.

Results

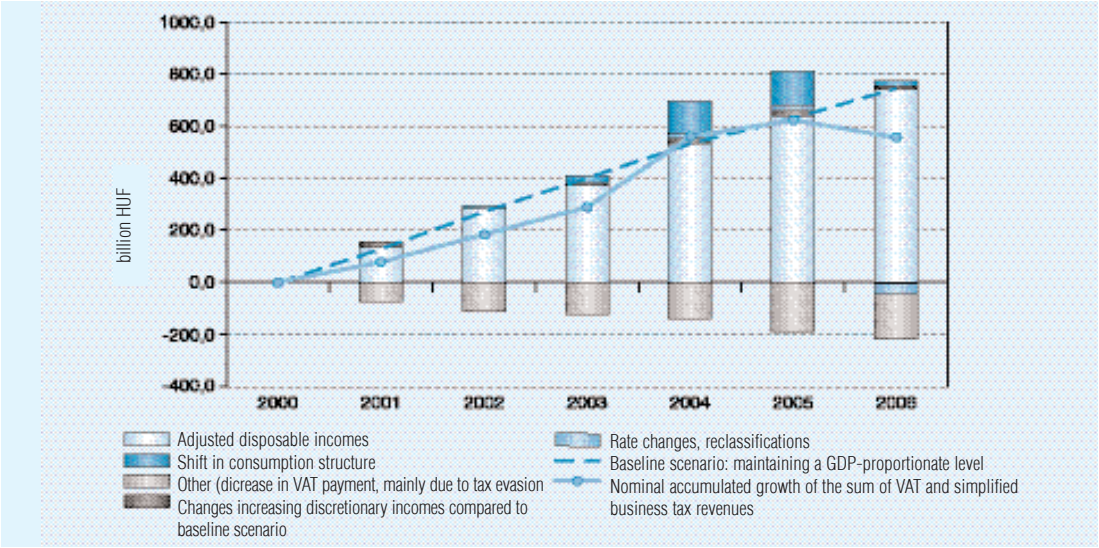
The deficit was decreased by the increase of incomes received from the state and by the indirect positive effect of reclassification of some products from reduced to standard rate (–0.3 percentage point in 2006), the increase of the wage share of the private sector (–0.1 percentage point in 2006), and the shift in the consumption structure towards standard VAT rate products (–0.1 percentage point). On the whole, rate changes increased the deficit (+0.2 percentage point). *(See Figure 12)*

The negative effect of the decrease of the standard VAT rate, causing a huge loss of revenue in 2006, was mostly compensated for by the positive effect of the increase of the reduced rate in 2004, which is why rate changes had a relatively moderate effect if we consider several years together. The decrease of the standard rate in 2006 in itself caused a budgetary deficit amounting to approximately 200 billion HUF (compared to the basic scenario established according to our calculation).

Figure 12

VAT REVENUES

Nominal accumulated growth compared to the year 2000 level



Please note: The exact data is to be found in Appendix C

"Other" factors (residual) that has remained unexplained is of a significant value, and with a minus sign. This is likely to be due to the often-mentioned fact that the extent of tax avoidance conspicuously grew in connection with the EU accession, which is usually traced back to the change of the tax collection system (i.e. the switch to the self reporting system from the customs office controlled one). The data available suggests that it is not subsequent to the EU accession that tax avoidance spread, but earlier (it had already amounted to 0.4 percent of the GDP in 2001), which. However, does not invalidate the basic suggestion that the spread of tax avoidance is connected to the accession process (in a general sense) as the basis of the typical VAT fraud techniques which are wide-spread in the EU is not EU membership but involvement in foreign trade with EU-countries. In addition to this, it cannot be excluded that the extent of tax avoidance has also grown domestically. Altogether, avoidance could contribute an approximate +0.7 percentage point to the deficit.

Other taxes on consumption

INFLUENCING FACTORS

The most important factors influencing other taxes on consumption are the state measures that altogether increased disposable incomes, the increase of the wage share of the private sector, and the decrease of the effective tax rate (the regular failure to revaluate excise duty rate).

Households' fuel purchases constitute final consumption while companies purchase fuel for intermediate production. Accordingly, there exist three factors explaining the changes concerning the state revenues derived from the excise duty of fuel used by companies:

- GDP growth,
- the changes of the intermediate consumption of the private sector divergent from the GDP, and
- the effective tax rate.

Hungary's being obliged to harmonise its excise duty rate because of the EU accession to some extent (primarily concerning the obligatory tax content of cigarette prices) generated surplus revenues for the public finance. We

have deducted this surplus from actual tax revenue as we give an account for the effects of the EU-harmonisation in the part on the budgetary effects of the EU accession.

$$T_j = W_c \frac{W}{W_c}(1-s)\tau_{jH} + Y^P \frac{Q^P}{Y^P}\tau_{jE}$$

where

T_j: taxes on consumption besides VAT (excise duty, consumption tax, vehicle registration tax, energy tax, gambling tax, motor vehicle taxes, other goods and services taxes) decreased by the surplus revenue generated due to the EU harmonisation,

Y^p: added value of the private sector,

Q^p: intermediate consumption of companies,

τ_{jH}: effective average excise duty rate of household consumption,

τ_{jE}: effective average excise duty rate of intermediate consumption of companies.

Results

The state measures increasing disposable incomes and the increase of the private sector wage share decreased the deficit by –0.2 percentage point, but other effects, mainly those of the repeated lack of revaluations (+0.2 percentage point) counterbalanced it. *(See Figure 13)*

Interest expenditures

Influencing factors

When investigating the details of the changes in interest expenditures, we abandoned the method of regarding productivity-proportionate and GDP-proportionate changes as basic scenarios. Instead, we constructed another basic scenario assuming that the 2000 Maastricht primary debt would remain unchanged – GDP-proportionately – during the whole period. This corresponded to our generally applied assumption that the GDP-proportionate size of expenditures and revenues remained unchanged in the basic scenarios. Under the baseline scenario concerning interests, the year 2000 monetary and financing conditions (implicit interest rates, i.e. both the interest premium and the proportion of HUF / foreign currency debts) remained unchanged, but we adjusted the debt stock with the actual privatisation revenues (i.e. as a base-case, we hypothesised that there had been no privatisation revenues after 2000).

To break down the changes in interest expenditures we used the Maastricht debts (in HUF and foreign currencies), the interest expenditures in the budget, as well as the implicit interest rates calculated both for HUF and for foreign currency denominations, which we simply calculated as the ratio of the interest expenditure (in HUF or in foreign currency) and the respective debtstock.

The algebraic relation that we started out from was:

$$\frac{I}{Y} = \frac{i^D D^D + i^F D^F}{Y}$$

where

Y: nominal GDP,

I: interest expenditure,

i: implicit interest rate,

D: debt stock $(D=D^F+D^D)$, and

the superscript indices D and F refer to HUF (domestic), and foreign currencies (foreign), respectively.

With certain algebraic transformations we arrive at:

$$I = i^F D + (i^D - i^F)\frac{D^D}{D} D$$

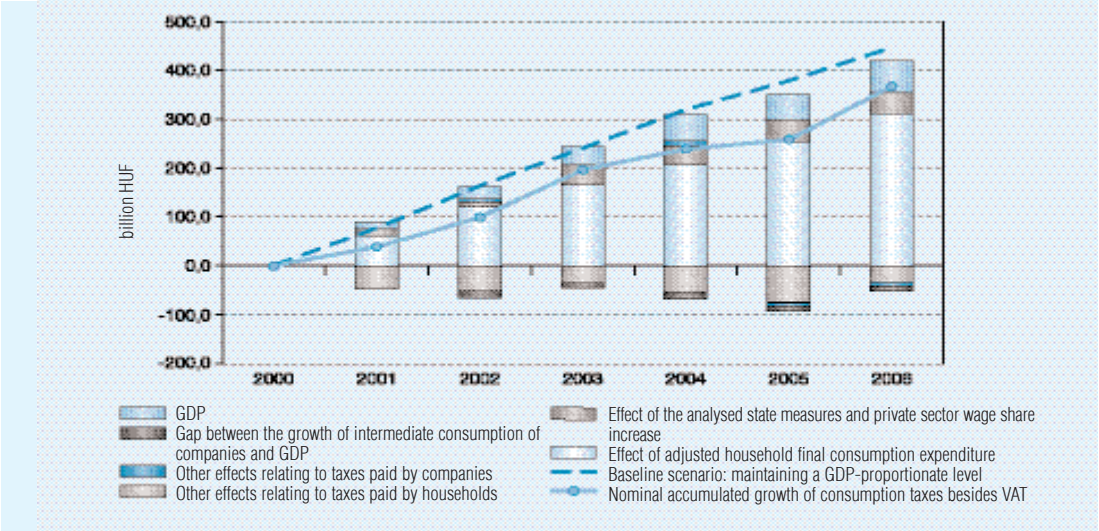
To calculate the effect of privatisation, we deducted the interest expenditure explained by the formula below from the actual interest expenditure on a residual basis.

Firstly, we established two factors within the changes in GDP-proportionate interest expenditures. Breaking down the two factors (sepa-

Figure 13

OTHER TAXES ON CONSUMPTION

Nominal accumulated growth compared to the year 2000 level



Please note: The exact data is to be found in Appendix C

rately), the first produced the effect of the changes in the implicit foreign currency interest rate, as well as a part of the effect deriving from the change of the debt stock; while the second expression produced the effect of the changes in the interest premium, the modifications caused by the change of the internal structure of the debt (moving toward higher proportion of HUF denominated stock), as well as the other part of the effect deriving from the change of the debt stock. We broke down the change of the debt stock into three factors: the effect of the change of the nominal GDP, the effect that the growth of the debt stock under the baseline scenario would have diverged from the growth rate of the GDP (would have grown slower), and the effect of the additional primary deficits resulted from those political decisions and external factors that are analysed in this study. The formula is:

$$\frac{D^P_{t+1}}{D^P_t} = \frac{Y_{t+1}}{Y_t}\left(\frac{D^A_{t+1}}{D^A_t} / \frac{Y_{t+1}}{Y_t}\right)\left(\frac{D^P_{t+1}}{D^P_t} / \frac{D^A_{t+1}}{D^A_t}\right)$$

where

D^P: actual debt portfolio without privatisation revenues,

D^A: debt portfolio under the basic scenario without privatisation revenues.

The three factors of the multiplication represent the three effects mentioned above, respectively.

Results

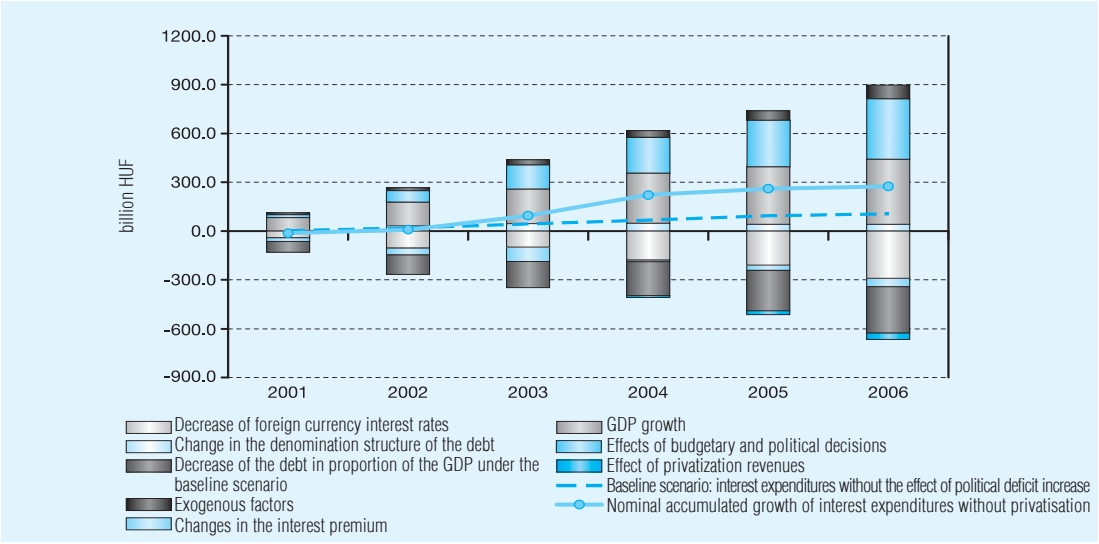
Under the baseline scenario public debt in 2006 would only have amounted to 36.9% in GDP, and thus interest expenditures would have been 1.6 percentage points lower in GDP (even if the higher level of interest rates of 2000 lasted up to 2006). *(See Figure 14.)* However, foreign currency interest rates decreased due to a favourable international climate (–1.25 percentage points) and the diminishing interest premium (–0.18 percentage point) significantly counterbalanced the adverse effects of the increase of the debt portfolio (+1.56%).

Privatisation revenues caused the deficit to decrease by –0.18 percentage point. Nevertheless, due to processes unrelated to the budgetary policy, interest expenditures grew by +0.33

Figure 14

CHANGES IN INTEREST EXPENDITURES

Nominal accumulated growth compared to the year 2000 level



Please note: The exact data is to be found in Appendix C

percentage point. Another factor that deteriorated the balance, to a smaller extent, though, was the increase of the proportion of debts in HUF (+0.18 percentage point).

The effect of the EU accession and customs revenues

Influencing factors

The budget deficit is increased by the contribution to the EU-budget and by the net loss of customs revenue, i.e. the difference between the disappearing customs revenues and the compensation for customs collection costs by the EU. Additionally the deficit is lowered by the EU compensation[19] and the compensation for sugar levy collection costs. We have considerered that the increase in excise duty revenues due to EU regulations is connected to the EU accession in a manner exactly analogous to customs decreases. The agricultural subsidies from the EU have partly replaced such items in the central budget, resulting in a decrease in the deficit.

Below, we shall only scrutinise on the direct effects of the EU accession, leaving out of consideration another, favourable budgetary effect, i.e. that the availability of EU funds make the financing of earlier programs possible with lower domestic funding. We find this solution justifiable according to the additionality criteria, too.

Results

Payments to the EU caused the deficit to increase by 0.8 percentage point in proportion of the GDP, while the deficit relating to the customs system amounts to 1 percentage point. The total of EU compensation and the compensation for sugar levy collection costs is insignificant.

The deficit-diminishing effect of the increase of the excise duty rates due to EU regulations amounts to 0.3 percentage point, and the agricultural subsidies from the EU replaced budgetary expenditures by 0.3 percentage point. *(See Figure15)*

All in all, the EU accession increased the GDP-proportionate deficit by a total of 1.1

percentage points due to the factors listed above, which finding remains valid irrespective of the fact that the main objective of the increase of the reduced VAT rate in 2004 was exactly to counterbalance this effect.

SUMMARY

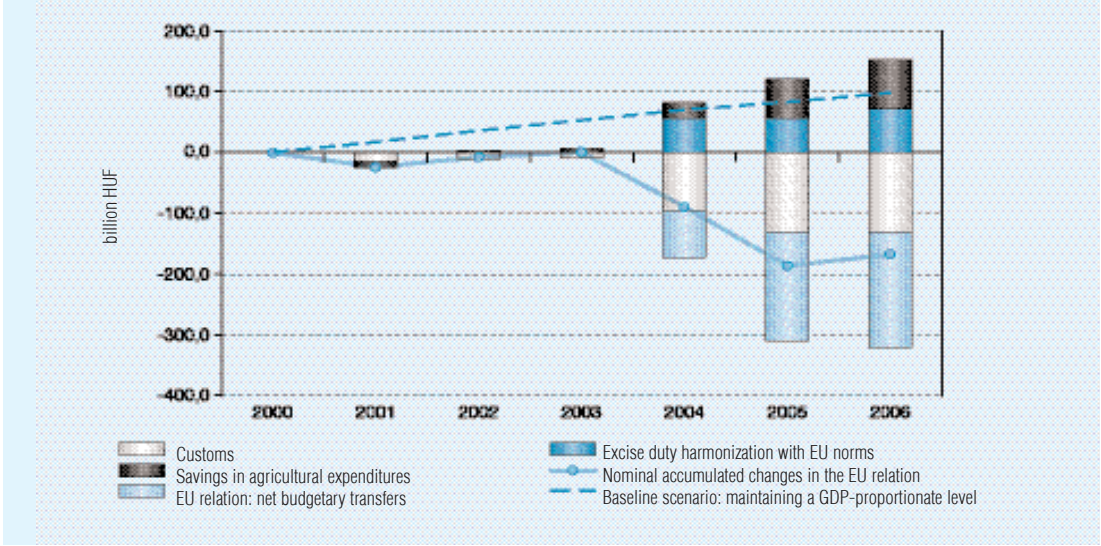
We have reviewed the most important changes regarding the structure of the central budget between 2000 and 2006 and have presented the main reasons of the increase of the budget deficit based on the figures. As for 2006, we have established a hypothetical deficit as a subject of the comparison which – based on experts' estimates – would have arisen if it had not been for the significant adjustment measures introduced in mid-2006. Prior to making comparisons between the GDP-proportionate budget deficits of the two years, we cleaned the data of all one-off effects, which modified the extent of the difference between year 2000 and 2006 deficits to 6.3 percentage points. The table below shows the cumulative deficit increasing effect of the separate factors:

Our calculations have revealed that the reasons of the increase of the deficit cannot be attached to a narrow area of expenditures or revenues. By no means can they be attributed to one or two important decisions of the economic policy, either. *(See Table 3)* Practically speaking, almost all essential budget items had a part in the process: each important tax type, each major type of income that private individuals received from the state, as well as the EU accession itself, and, as a consequence of these – naturally – the debt burden. (The only exception is the so-called non-wage operational costs of the state, which – perhaps in harmony with the unchanged number of governmental employees – did not rise at a pace higher than the nominal GDP.) The diversity of the measures causing the increase of the deficit and the very different characteristics of these discredit

Figure 15

EU-RELATION AND CHANGES IN CUSTOMS REVENUES

Nominal accumulated growth compared to the year 2000 level



Please note: The exact data is to be found in Appendix C

Table 3

SIGNIFICANCE OF THE FACTORS THAT EXPLAIN CHANGES IN THE DEFICIT

Political decisions	Decisions increasing the deficit	growth of dept stock as a consequence of political decisions	1.56	11.47	9.33
		one-off effects (including motorway investments)	1.48		
		net wage increases in the government sector above the increase of productivity of the private sector	1.45		
		net loss of customs revenues because of the EU accession	1.00		
		developmental policy	0.82		
		decrease of lump sum health care contribution	0.66		
		decrease of income tax rates, together with its effect on the Swiss index	0.63		
		decrease of the social security contribution rate	0.55		
		effect of (extraordinary) pension increases over the Swiss index (built in the pension base)	0.54		
		13th month pensions	0.52		
		balance of EU payments and compensations	1.48		
		family support from central budget	0.46		
		gas price support (taking savings from quasi-fiscal activity into consideration)	0.31		
		changes of mortgage bond and housing loans interest rate subsidy after 2000	0.21		
		changes in VAT rates and classifications	0.20		
		changes of corporate income tax rates	0.19		
		lack of revaluation of other taxes on consumption	0.17		
		housing supports without significant lagging effects	0.13		
		corporate income tax regulatory changes in 2006	0.08		
		change of the number of employees in the government sector	0.03		
	Decisions decreasing the deficit	change in the intensity of drug subsidy	–0.01	–2.14	
		decrease of personal income tax allowances (without family allowance and allowance on housing loan repayments)	–0.06		
		special tax of financial institutions	–0.15		
		decrease of family tax allowance	–0.28		
		replacement of agricultural subsidies by EU transfers	–0.35		
		effect of privatisation revenues on interest expenditures	–0.18		
		taxation effect of state measures influencing disposable incomes	–0.43		
		subsidy of rail transport, net	–0.68		
Other effects	Effects increasing the deficit	effect of tax evasion on VAT revenues (on a residual basis)	0.73	2.69	–0.94
		rotational effect in pensions	0.54		
		effect of growing drug consumption on subsidy	0.53		
		determinations of the mortgage bond and housing loans interest rate subsidy system	0.52		
		change in the currency denomination of debt stock	0.18		
		decrease of the proportion of those who are not private pension fund members	0.15		
		increase of intermediate consumption falling behind increase of GDP (at other taxes on consumption)	0.05		
		demographic impact on pension expenditures (decrease in number of pensioners)	–0.05		
	Effects decreasing the deficit	expiry of certain housing subsidies	–0.07	–3.63	
		shift in consumption structure	–0.07		
		increase in the number of employees in the private sector	–0.08		
		increase of the corporate income tax base above that of GDP	–0.08		
		effect of interest rate cuts on housing loans interest rate subsidies	–0.13		
		change in interest premium	–0.19		
		wage increase in the private sector above productivity growth	–0.21		
		decrease in corporate income tax allowances	–0.23		
		other (sum of inexplicable factors in the case of income tax. contributions, and corporate income tax)	–0.39		
		effect of factors influencing deficit, unrelated to political decisions, on interest expenditures	0.33		
		decrease of GDP-proportionate debt under baseline scenario	–1.20		
		effect of change in foreign currency interest rate on interest expenditures	–1.25		

oversimplifying explanations, which are often present in the public discourse and cite only one or two reasons. Still, the figures have revealed that each of the explanations, mentioning any of the reasons listed, actually has some partial truth to it.[20]

In the course of the analysis, we did take into consideration not only the impact of the measures of the state, but certain exogenous factors as well. Differentiating between endogenous – i.e. government-induced – and exogenous factors is an essential point within the study; However, our choices applied in this respect are not meant to exclude the possibility of a debate (which is the reason why we have taken such great care concerning the documentation of the data that we used).

According to our own principles of classification, the exogenous effects have mostly served to improve the balance (especially the decrease of the international interest rates and the increase of the wage share in the private sector), thus it can be claimed that the rise of the deficit has been caused by decisions that the economic policy controlled. We can establish five groups within these political decisions:

- the increase of households incomes and transfers received from the state (2.8 percentage points),
- the decrease of the tax burdens of the private sector (1.8 percentage points),
- the EU accession (1.1 percentage points),
- one-off expenditures (mainly motorway constructions) and other expenditures relating to the developmental policy (2.2 percentage points) the increase of the debt and the interest expenditures due to these (1.4 percentage points).

Due to this all-embracing looseness of budgetary policy the debt level reached 66% in GDP whereas under the baseline scenario (without this general looseness) it would only have amounted to 36.9% in GDP.

All this reinforces the general opinion that the whole budgetary policy and the budgetary system need/needed to be readjusted and reformed. Accordingly, the adjustment measures announced in mid-2006 are expected to curb the previous increase of the incomes received from the state in proportion of the GDP – in the case of all types of incomes with the exception of pensions –, while tax revenues from the private sector are to rise again due to higher tax rates, the tax burden in its entirety is not expected to rise above the year 2000 level.

It is obvious that the optimal solution for putting the budget in order should not necessarily entail the total turnaround of the tax decreases of the past 6 years as these measures have partly served to decrease the above-the-average burdens of labour incomes, the direct negative budgetary effect of the EU accession is not going to disappear as the payments to the EU rise in proportion of the GDP, while the revenues are not to flow into the budget in the future, either, this effect which deteriorates the balance permanently, partly justifies increasing the tax burdens to a certain extent.

The debt burden means the highest external risk in the years to come since – as we have seen – the only reason for the decrease of the interest expenditures in proportion of the GDP was the decrease of the EUR interest rate. Should the trend of the last few years reverse, it may induce the increase of the HUF interest rate, constituting an increase of 0.7 percentage point per percentage point in proportion of the GDP in the deficit. A remedy against this may be the decrease of the debt rate in the middle run. However, in the short run, the only remedy may be decreasing the HUF risk premium. At the moment, we know of no better recipe for that latter end than the restoration of the discipline and the credibility of the economic policy.

Appendices

Appendix A

Table 1

TYPES OF EXPENDITURES SUPERVISED BY EU UNDER ADDITIONALITY CRITERIA

1	Main group 2	Group of functions 3
1. Basic infrastructure		
Transport	F12 a, b, d	Capital expenditures and capital transfers
Telecommunication	F12 c	Capital expenditures and capital transfers
Energy	F09	Capital expenditures and capital transfers
Environment	F14	Capital expenditures and capital transfers
Health	F05	Capital expenditures and capital transfers
2. Human resources		
Education/training	F04	Capital expenditures and capital transfers
	F04 b, c	Half of current expenditures and current transfers
	F04 a, d	Subsidies and current transfers
R&D	F01 e, d	Capital expenditures and capital transfers and half of current expenditures and current transfers
3. Productive environment		
Agriculture/Rural development/Fisheries	F10	Certain expenditures
Industry	F11	Capital expenditures and capital transfers, subsidies and current transfers
Services	F13 b	Capital expenditures and capital transfers, subsidies and current transfers
Tourism	F13 b	Certain special appropriations [21]
4. Other	F13 a	Subsidies and current transfers
		Capital expenditures and capital transfers

Appendix B

Table 2

BUDGETARY DATA ON THE INTERNAL BREAKDOWN OF CONTRIBUTION REVENUES AND THE VAT PAID BY THE INSTITUTION OF THE GENERAL GOVERNMENT, CASH-BASED (million HUF)

	2000	2001	2002	2003	2004	2005	2006
Types of contributions							
Contributions paid by employers, government, expenditure table	385 970.8	432 404.8	510 039.3	599 477.7	617 831.3	661 091.8	669 552.5
Social security contribution revenues from outside the public finance	756 723.3	884 450.7	920 507.1	1 000 629.7	1 086 971.3	1 136 393.5	1 186 042.8
Social security contribution revenues from within the public finance	315 986.1	312 417.2	406 389.9	476 472.6	494 720.8	601 963.6	522 193.7
Employer's contribution (Labour market fund) revenues	93 714.9	110 655.3	131 754.0	146 334.5	157 507.2	172 832.2	166 711.0

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Lump sum health care contribution	169 712.1	179 933.5	186 646.3	152 175.5	150 455.8	138 090.8	78 937.0
Lump sum health care contribution from within the public finance	47 113.4	38 842.2	49 328.9	36 792.2	39 471.3	44 396.7	18 708.0
Lump sum health care contribution from outside the public finance	122 598.7	141 091.3	137 317.4	115 383.3	110 984.5	93 694.1	58 098.0
Sick leave contribution	13 386.8	14 624.5	18 066.0	21 382.6	22 380.3	23 164.7	19 730.4
Other contributions	56 793.3	81 058.9	95 248.5	97 284.4	100 856.2	115 192.2	142 109.5
Contributions paid by employees	264 551.1	314 355.3	371 391.3	407 579.2	457 600.4	500 284.9	506 234.3
Employee's contribution (Labour market fund) revenues	42 864.0	50 537.4	60 035.3	47 141.3	48 259.5	58 787.3	51 146.7
Employee's pension and health care insurance contributions (social security)	221 687.1	263 817.9	311 356.0	360 437.9	409 340.9	441 497.6	455 087.6
VAT-related items among the non-wage operational expenses of the public finance							
VAT charged	117 135.9	130 360.7	147 124.9	155 338.9	185 661.2	198 296.8	
VAT paid to the tax authority	11 722.9	12 918.4	14 790.8	16 403.8	15 964.9	15 817.4	

Please note: the 2004–2005 cash-based figures have been adjusted: 40 billion HUF has been added to the 2004 figures and deducted from the 2005 figures.

Source: Ministry of Finance

Appendix C
Data, remarks, and partial results of calculations

Wages in the government sector

Our calculations have been based on the – somewhat unjustified – assumptions that the composition (sector-based distribution) of those employed by the state has not changed. The results of the modification in the composition therefore mingle with the effects of the general wage raise.

The calculations are based on the compensation of employees in the government sector in the national accounts. The government sector is somewhat wider, thus the overall wage expenditure is larger than that can be seen in the budgetary final accounts (by approximately 0.4 percentage point in proportion of the GDP). As the government's decisions concern the wider government sector, it is expedient to use figures in national accounts.

Please note that the 2006 figures are to be treated with care, firstly, as they are preliminary figures, and, secondly, as they are not available within exactly the same framework as the figures relating to 2000–2005. Thus, concerning 2006, calculation on gross compensation of employees are based on the *Convergence Programme (CP)* figures, whereas the respective contribution and income tax revenues paid by the institutions in the government sector are estimated on the basis of the 2006 *Budget Act.*

Table 3

	2001	2002	2003	2004	2005	2006
Wage growth following the productivity of the private sector	99.6	206.3	293.9	383.1	470.3	570.2
Average gross wage income increases in the government sector above the productivity of the private sector	36.5	104.6	201.4	155.5	168.0	112.7
Increase in the number of employees	–2.7	9.2	31.7	29.0	17.7	5.9

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	2001	2002	2003	2004	2005	2006
Tax and contribution cuts	135.6	91.4	181.1	118.6	159.2	177.8
Nominal accumulated growth of total net wage income in the government sector	269.1	411.5	708.1	686.2	815.2	866.6
Baseline scenario: maintaining a GDP-proportionate level	80.3	169.2	249.0	330.9	391.5	462.3

Expenditures relating to pensions

Table 4

	2001	2002	2003	2004	2005	2006
Total annual pension expenditures (bn HUF)	1308.2	1517.8	1721.4	1914.1	2145.4	2322.2
Number of pensioners (thousand)	2754.0	2754.0	2745.0	2731.0	2734.0	2734.0
Number of pension weeks (13th month pension)	52.0	52.0	53.0	54.0	55.0	56.0
Changes compared to the previous year						
Increase according to the Swiss index	1.127	1.125	1.095	1.063	1.068	1.052
Extraordinary (political) increase	1.028	1.030	1.012	1.011	1.005	0.992

Table 5

	2001	2002	2003	2004	2005	2006
Number of pensioners	0.0	0.0	–4.6	–12.4	–11.5	–12.0
Pension increase according to the Swiss index, productivity effect	91.0	179.2	232.3	317.0	391.3	487.1
Pension increase according to the Swiss index, inflation effect	52.6	87.8	124.6	188.3	225.6	264.8
Increase of average gross earnings in the private sector above productivity	4.5	8.8	21.9	15.8	16.8	10.2
Increase of average gross earnings in the public sector above productivity	7.4	36.5	64.2	42.8	58.2	52.0
Effect of the decrease of taxes and contributions on wages	–10.3	–1.6	16.4	12.6	26.1	19.4
Increase over the Swiss index	34.0	75.2	96.9	118.6	134.7	127.3
Gradual introduction of the 13th month pension	0.0	0.0	26.7	56.0	88.6	122.4
Rotational effect (on a residual basis)	4.5	7.4	18.5	50.9	91.0	126.6
One-off pension allocation, 2002		53.0				
Nominal accumulated growth of pension expenditures	183.7	446.2	596.9	789.5	1020.9	1197.7
Baseline scenario: maintaining a GDP-proportionate level	144.8	305.1	449.0	596.6	705.7	833.4

We have used the *data of the Hungarian Central Statistical Office* concerning increases in the average net earnings in both the private and the government sectors. This is important to highlight because the budgetary data on the changes of average net wage incomes in the government sector may be used as an alternative source of data. However, as it has been mentioned before, there are significantly different total net wage figures in the two sources, and consequently different wage dynamics are arrived. The reason for using the statistics of the Hungarian Central Statistical Office when analysing pensions is that it is demanded by the law on pension, and it is the basis of the Swiss index. Despite all our efforts to harmonise the two statistics, we have not found a real solution.

Family supports

Table 6

	2001	2002	2003	2004	2005	2006
Child care benefit	13.5	47.1	107.1	100.1	118.5	263.2
Family tax allowance	47.3	46.4	38.3	35.9	35.1	–31.8
Nominal accumulated growth of family supports	60.9	93.5	145.3	136.0	153.6	231.4
Baseline scenario: maintaining a GDP-proportionate level	32.5	68.5	100.8	134.0	158.5	187.2

Drug subsidies

Table 7

	2000	2001	2002	2003	2004	2005	2006
Drug subsidy	150.8	179.5	209.0	251.8	289.0	348.9	388.0
Pharmaceutical producer's price index, year on year average	103.2	105.4	105.4	112.1	108.0	106.5	107.0
Pharmaceutical producer's price index, cumulated	103.2	108.8	114.6	128.5	138.8	147.8	158.2
Pharmaceutical consumption (amount paid by private individuals)	83.3	111.0	134.4	146.4	159.0	177.6	222.1
Total expenditure relating to pharmaceutical consumption	234.1	290.4	343.5	398.2	448.0	526.5	610.1
Subsidy ratio	0.64	0.62	0.61	0.63	0.65	0.66	0.64

The data in the table is to be treated with caution as the figures of the Health Care Statistics of the Hungarian Central Statistical Office concerning the pharmaceutical consumption of private individuals in 2005 and 2006 are not available yet. As a proxy, we decided to rely on the turnover figures of retail units engaged in the sale of drugs and medical products.

Table 8

	2001	2002	2003	2004	2005	2006
Consumer price index, CPI	14.5	24.9	36.6	53.4	67.7	80.6
Producer's pharmaceutical price increase over CPI	–0.6	–0.5	12.9	16.2	24.6	34.5
Volume change in drug consumption (residual)	21.7	44.0	55.2	68.2	99.1	125.3
Change in the subsidy ratio	–6.8	–10.1	–3.6	0.3	6.7	–3.2
Nominal accumulated growth of drug expenditures	29	58	101	138	198	237
Baseline scenario: maintaining a GDP-proportionate level	19	41	60	80	95	112

Housing subsidies

Table 9

	2000	2001	2002	2003	2004	2005	2006
Supports with significant lagging effects	**8.2**	**14.9**	**35.1**	**100.6**	**145.0**	**172.4**	**152.8**
Interest rate subsidies (of private houses constructions)	2.4	8.2	27.7	89.7	130.4	154.9	129.5
Interest rate subsidies of local government loans*	0.7	0.2	1.8	4.9	6.3	6.7	7.0
Home savings fund supports	5.1	6.5	5.7	5.9	8.3	10.7	16.3
Supports without spread-over effects	**32.6**	**37.1**	**31.2**	**34.8**	**57.6**	**77.5**	**69.9**
Social housing subsidy**	24.2	21.3	19.2	30.1	33.3	39.1	38.2
Social housing subsidy with advance payment	–0.2	–0.2	–0.3	0.0	1.0	2.7	9.2
Young people's home building support	0.0	0.0	0.0	0.0	0.0	16.6	16.0

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	2000	2001	2002	2003	2004	2005	2006
Tax refund subsidy	5.0	6.2	6.5	9.0	9.7	6.0	2.1
Panel block reconstruction	0.0	0.0	0.0	0.0	0.0	1.8	0.8
Disabled people's subsidy	2.3	2.3	3.1	2.8	2.4	2.3	1.8
Other, with cash-based spread-over	1.3	7.5	2.7	–7.2	11.2	9.0	1.8
Soon to expire	**8.9**	**8.3**	**6.0**	**1.8**	**1.4**	**1.1**	**0.5**
Personal income tax allowance on housing loan repayments **	**2.2**	**5.6**	**17.3**	**31.2**	**21.8**	**22.6**	**21.4**
Nominal accumulated growth of housing expenditures	**51.9**	**65.9**	**89.5**	**168.4**	**225.7**	**273.6**	**244.6**
Baseline scenario: maintaining a GDP-proportionate level	51.9	58.6	66.0	72.7	79.5	84.5	90.6

* Support of water utility and home refurbishment loans

** Among personal income tax benefits

It is not easy to separate the effects of government measures and other factors on the increase of housing loan interest subsidies. It is practically impossible with necessary accuracy to analyse the numerous regulatory changes after 2000, the growth of the stock of mortgage bonds and housing loans, the changes in monetary conditions, and the interactions of these factors. No accurate statistics on the stock data harmonising with the data on borrowing are available, and all stock data from before 2004 is missing. Information had been provided by the Housing Loan Monitor of Magyar Téglás Szövetség (Tiles and Bricks of Hungary) since 2000, but only in 2003 did it become a requirement within the framework of obligatory data provision to provide information for the ministerial unit dealing with this subject.

We chose the following solution regarding interest subsidies: we considered the consequence of government measures the part of the increase of expenditures that caused the expenditures to be higher than it would have been expected if the 2000 conditions of subsidy had been unchanged, that is, we made an estimate: what if there had existed the 2000 subsidy conditions in 2006 and the stock of mortgage bond and housing loan stock had been the same as in Q1 2006, then we made the same estimate but assumed that the relevant interest rates to be at their 2000 level (this way estimating the effects of interest rate changes in the period).

$$H_r = H_{rM} + \{D_{sub6}\, I_{sub0} + (D_{sub6}\,(I_{sub6} - I_{sub0})) + (H_{sub6} - D_{sub6}\, I_{sub0} - D_{sub6}\,(I_{sub6} - I_{sub0}))\}$$

where

H_r: increase of housing loans and mortgage bond interest rate subsidy between 2000 and 2006 (HUF),

H_{rM}: change of mortgage bond interest rate subsidy between 2000 and 2006 (HUF),

H_{sub6}: sum of housing loans interest rate subsidy in 2006,

I_{sub0}: percentage of housing loans interest rate subsidy, with 2000 benchmark interest rates,

I_{sub6}: percentage of housing loans interest rate subsidy, with 2006 benchmark interest rates,

D_{sub6}: housing loan stock with housing loans interest rate subsidy in 2006.

The increase in mortgage bond interest rate subsidy (H_{rM}) solely originates from the change of the volume of the mortgage bond stock as the subsidy system established in 2000 sets a fixed interest rate subsidy.

Concerning the changes in the housing loans interest rate subsidy system, $D_{sub6}\, I_{sub0}$ expresses how large the expenditure would have been without changes in the interest rates; the expression $D_{sub6}\, (I_{sub6} - I_{sub0})$ shows the effect of the changes of the interest rates on expenditures; and the expression $H_{sub6} - D_{sub6}\, I_{sub0} - D_{sub6}\, (I_{sub6} - I_{sub0})$ unifies all the other effects of the changes in the subsidy system.

As *Table 10* below shows, the subsidy granted for mortgage bonds and housing loans interest rate subsidy amounted to 126.9 billion HUF in 2006. Under the year 2000 conditions, a subsidy demand of 76.8 billion HUF would have been generated on the 2006 stock. Improved monetary conditions in 2006 would have resulted in savings worth 30.9 billion HUF if the loans stock had been borrowed under the 2000 conditions. With the given stock, and filtering out the effects of the changes in the benchmark interest rates, *other factors* caused a growth of expenditures of 50 billion HUF. By other factors we mean the "generosity" or "closeness" of the system.

The condition of the subsidy system obviously influences people's willingness to borrow (i.e. the changes in the loan stock), while households' income situations, their need to make up for private investments that have failed to take place before, the distribution of incomes, several other socio-economic factors, as well as the expectations concerning changes in the subsidy system also have a considerable impact on that willingness. The increased generosity of the subsidy system – especially concerning subsidies granted for mortgage bonds – compared to 2000 was one of those other factors. Therefore the growth of mortgage bond and housing loan stock is partly the results of endogenous and partly of exogenous factors, but we cannot estimate the relative weight of them.

Table 10

	2005	2006	Estimated expenditures on the portfolio at the beginning of 2006 under the 2000 subsidy conditions		2006 expenditures	2000–2006 difference		
	Q2	Q1	2000 monetary conditions	2006 monetary conditions		Total	Out of which: changes in monetary conditions	Factors other than the monetary conditions
Loans with only mortgage bond interest subsidy								
Mortgage bonds with interest rate subsidy, total*	1 258 391	1 257 725	37 732	37 732	93 850	56 118	0	56 118
Loans with housing loans interest rate subsidy								
Two-side housing loan interest rate subsidy (loans both with mortgage bond interest rate subsidy and with housing loans interest rate subsidy)**	192 243	184 707	18 200	9 286				
One-side housing loan rate interest subsidy (loans only with housing loans interest rate subsidy)***	424 459	456 351	51 812	29 788				
Housing loans interest rate subsidy, total	616 703	641 057	70 012	39 074	33 000	–37 012	–30 938	–6 074
Total #1 875 094	1 898 783	107 744	76 806	126 850	19 106	–30 938	50 044	

* 3 percentage point subsidy

** Two-side housing loan interest rate: appropriate benchmark minus 5.5%

*** One-side housing loan interest rate: appropriate benchmark minus 4%

Loans with housing loan interest rate subsidy + Mortgage bonds with interest rate subsidy, total

We claim that 50 billion HUF – i.e. 0.2 percentage point in proportion of the 2006 GDP – out of the growth of interest subsidies amounting to 126.8 billion HUF between 2000 and 2006 is to be regarded as the consequence of post-2000 government measures (drawing attention to the importance of the cautious wording in this respect). If the 2000 conditions had been maintained and the monetary policy had remained unchanged – assuming that stock increase was exogenous –, expenditures would have risen to 107.7 billion HUF, which would have been decreased by 31 billion HUF due to diminishing interests. As an overall effect of these, "freezing" the 2000 subsidy conditions, but also, keeping the subsidy system intact would have caused expenditures to rise to 76.8 billion HUF.

We would emphasise again, it is difficult to guess how the housing loan portfolio would have developed without state subsidy. We did not examine this relation during this phase of the analysis. What can be stated is that subsidy conditions considerably improved in 2001–2002, which accelerated the growth of the bond and loand stock. However, the regulatory changes introduced in late 2003 curbed the growth of the loan portfolio. The factors influencing housing investments, and consequently the willingness to borrow are likely to have had a great part in the growth of stock. Dynamically rising wages were a factor to lead to the expansion of the subsidised loan stock.

Other subsidies

A considerable portion of the data necessary for our calculations was provided by the reports of the companies in question and the budgetary final accounts. In the case of Hungarian Power Companies (MVM), we used an estimate prepared by the company at our request.

Table 11

(billion HUF)	2000	2001	2002	2003	2004	2005	2006
Data on MÁV (Hungarian State Railways)							
usual business result (loss)	24.8	32.0	41.2	36.1	54.9	87.6	79.4
company specific subsidy	47.3	50.7	56.5	58.8	53.2	53.0	52.5
consumer price subsidy	20.0	21.3	24.3	24.2	27.9	28.8	30.5
MÁV debt assumption	36.5	0.0	117.7	0.0	0.0	0.0	0.0
Data on MVM (Hungarian Power Companies)							
Changes in the loss due to state price regulation*	12.5	9.9	40.7	–36.9	–1.1	–10.7	0.0
MVM's recapitalisation	0.0	32.0	0.0	0.0	0.0	0.0	0.0
Data on MOL (Hungarian Oil and Gas)							
Loss generated by the gas and energetics branch	–118.9	–124.1					
Gas price subsidy in the budget, emte expenses**				1.1	43.8	76.0	208.8
Gas price subsidy in the budget, emte revenues**				10.1	65.8	108.7	84.2

*+ = increase of loss
** emte = energy management fund

Table 12

	2000	2001	2002	2003	2004	2005	2006
Other subsidies (I+II+III)**	**169.9**	**167.0**	**316.1**	**74.0**	**59.0**	**49.1**	**207.5**
I Subsidy of rail transport, net (=I.1-I.2)	*140.2*	*72.0*	*316.1*	*83.0*	*81.0*	*81.8*	*83.0*
I.1 Subsidy of rail transport, gross (a.+b.)	128.5	104.0	239.7	119.1	136.0	169.4	162.4

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	2000	2001	2002	2003	2004	2005	2006
a. MÁV's loss (usual business result)	24.8	32.0	41.2	36.1	54.9	87.6	79.4
b. State transfers received by the rail company**	103.7	72.0	198.5	83.0	81.0	81.8	83.0
I.2 State "revenue" (savings) from the quasi-fiscal activity of the rail company (c.-d.)	–11.7	32.0	–76.5	36.1	54.9	87.6	79.4
c. MÁV's loss (usual business result)	24.8	32.0	41.2	36.1	54.9	87.6	79.4
d. Debt assumption	36.5	0.0	117.7	0.0	0.0	0.0	0.0
II Subsidy of electric energy, net (=II.1-II.2)	*0.0*	*64.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
II.1 Subsidy of electric energy, gross (a.+b.)	12.5	41.9	40.7	–36.9	–1.1	–10.7	0.0
a. Changes in the loss due to state price regulation	12.5	9.9	40.7	–36.9	–1.1	–10.7	0.0
b. MVM's recapitalisation	0.0	32.0	0.0	0.0	0.0	0.0	0.0
II.2 State "revenue" (savings) from the quasi-fiscal activity of MVM (c.-d.)	12.5	–22.1	40.7	–36.9	–1.1	–10.7	0.0
c. Changes in the loss due to state price regulation	12.5	9.9	40.7	–36.9	–1.1	–10.7	0.0
d. MVM's recapitalisation	0.0	32.0	0.0	0.0	0.0	0.0	0.0
III Gas price subsidy, net (=III.1-III.2)	*29.7*	*31.0*	*0.0*	*–9.0*	*–22.1*	*–32.7*	*124.6*
III.1 Gas price subsidy, gross (a.+b.)	118.9	124.1	0.0	1.1	43.8	76.0	208.8
a. Loss generated by MOL's gas business branch	118.9	124.1					
b. Emte expenditures				1.1	43.8	76.0	208.8
III.2 State "revenue" (savings) from the quasi-fiscal activity of MOL and emte revenues (c.+d.)	89.2	93.1		10.1	65.8	108.7	84.2
c. Privately owned shares (lost dividend)	89.2	93.1					
d. Emte revenues				10.1	65.8	108.7	84.2

* The *change* of other subsidies influenced the ESA-deficit (in HUF) (decrease = decreasing the notified ESA-deficit, increase = increasing the notified ESA-deficit)

** Consumer price subsidies, company specific subsidies, debt assumptions

Corporate income tax

Table 13

	2000	2001	2002	2003	2004	2005	2006
Operating surplus of the business sector	2902.6	3166.8	3815.3	3967.5	4336.3	4831.5	5327.2
Corporate income tax, net, actual	295.7	344.8	396.6	413.7	448.7	430.1	492.0
Out of which: special tax*	0.0	0.0	0.0	0.0	0.0	35.6	36.1
Tax allowances	100.4	80.9	82.6	129.3	50.4	62.5	75.6
Corporate income tax rates **	18.0	18.0	18.0	18.0	16.0	16.0	16.0
Effect of tax regulation changes in 2006***							–18.8
Net corporate income tax, adjusted#	295.7	344.8	396.6	413.7	448.7	394.5	474.7

* Credit institutions and financial enterprises

** The 10% rate for SMEs appeared in 2006

*** Deductibility of the local business tax, VAT effect, depreciation, introduction of the 10% rate

Without the special tax of credit institutions and financial enterprises, without the effect of tax regulation changes in 2006

We started out from the accrual-based net value of the corporate income tax, and also made use of the accrual-based tax allowance figures.

There exists a publicly available governmental estimate regarding the value of the special tax of credit institutions and financial enterprises introduced in 2005. However, regarding the size of other 2006 changes of tax regulations, only the expert calculations of the Ministry of Finance were available. The value of tax allowances can be found in the budgetary closing accounts.

Table 14

	2001	2002	2003	2004	2005	2006
Rate cuts	0.0	0.0	0.0	–43.2	–40.4	–44.5
Tax changes in 2006	0.0	0.0	0.0	0.0	0.0	–18.8
Special tax	0.0	0.0	0.0	0.0	35.6	36.1
GDP	38.7	82.5	118.0	156.2	166.9	209.7
Operating surplus of the business sector	–10.9	11.5	–8.2	–8.9	7.7	19.9
Tax allowances	26.0	35.4	7.1	68.2	49.8	54.6
Other	–4.8	–28.5	1.0	–19.2	–85.3	–60.7
Nominal accumulated growth of corporate income tax revenues	49.1	100.8	117.9	153.0	134.4	196.3
Baseline scenario: maintaining a GDP-proportionate level	38.1	80.2	118.1	156.9	185.6	219.1

Personal income tax

Table 15

	2000	2001	2002	2003	2004	2005	2006
Total sum of personal income tax, net	965.2	1131.3	1294.4	1321.5	1367.1	1449.7	1572.3
The part of PIT revenues not related to wages and salaries	74.2	80	95.5	95.2	103.4	120.8	141.8
Average tax rate*	29.0	29.1	29.1	29.1	26.1	25.1	24.7
Gross personal income tax, adjusted***	1111.8	1296.4	1455.7	1637.0	1577.7	1643.4	1753.3
out of which: public sector (estimated)	332.5	345.8	457.5	531.4	542.4	528.8	544.2
private sector (estimated)	779.3	950.6	998.2	1105.6	1035.4	1114.6	1209.2
Deductible tax allowances**	154.8	179.7	176.1	277.4	206.1	213.3	222.7

* Tax calculated / consolidated tax base

** Private sector, estimated, narrowly defined allowances

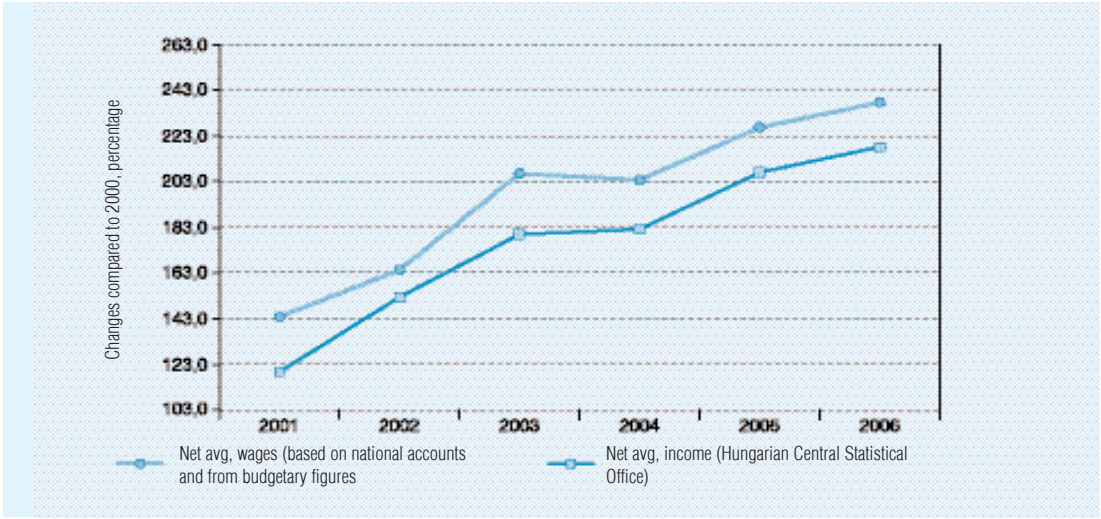
*** Without PIT revenues not related to wages and salaries

The Hungarian Central Statistical Office publishes data on the wages of those employed by the state. Firstly, it publishes the compensation of governmental employees figures in the framework of the national accounts, which are in harmony with the budgetary data compiled according to the ESA methodology. Secondly, it publishes the average wages and numbers of those employed in the public sector. The two data sources publicate significantly different figures, the dynamics of which are differing, as well. Therefore, our analysis proves to be inconsistent at this point: in the case of pensions, we relied on the statistics on net average wages – as the law requires, whereas in the case of wages in the government sector, we worked with net wage income of governmental employees figures in the national accounts.

It is only possible to estimate the distribution of the overall ESA-95 income tax revenues between the private and the government sector on the basis of cash-based data. A *cash-based* data tables compiled in the Ministry of Finance[22] provide details on how much of some types of contributions derived from the private and how much of government sectors. Concerning other tpyes of contributions [employer's and employee's (labour market) contribution revenues, sick leave

Figure 1

NET AVERAGE WAGES FROM TWO SOURCES OF DATA, GOVERNMENT SECTOR



contribution, employee's pension and health care contributions] and personal income tax where such details are unavailable, we divided the total revenue between the private and government sectors in the same proportion as that calculated at the former types.[23]

The discrepancies between the cash-based and accrual-based frameworks cause a major problem regarding the years 2004–2005, which we attempted to correct. The 13th month wages for 2004 were paid in 2005. The 13th month wages due for 2004 and *paid* in 2005, does not concern the accrual-based compensation of government employees in 2005, whereas it increases the amount of *cash-based* contributions income derived from the government sector. To correct this inconsistence, we added an approximate value of 40 billion HUF to the 2004 aggregate contributions revenues derived from within the general government, and deducted the same from the 2005 aggregate contributions revenues.

The data table in Appendix B does not contain the whole ESA circle, only the general government. Therefore it was necessary to modify the data on the income tax and contribution payments of the government sector presented in this particular data table by using a quotient expressing the proportion of the ESA circle and the general government in the wage expenditures figures each year. [For this, we divided the sum of the wage expenditures *in the budgetary closing accounts* (including employer's contribution expenditures) by the *ESA-based* compensation of government employees, this ratio is fluctuating between 94–96% in that period.]

It may be a source of inaccuracy that the compensation of government employees in 2006 is identical with the data in the Convergence Programme, while we only made approximate estimates for the distribution of the individual types of contributions and of income tax revenues between the private and the government sectors. [We assumed that in 2006, all the leeway of contributions expected prior to the adjustment programme was to fully ensue, this would represent an approximate 1.8% decrease in the case of each contribution type (employer's social security payments, employer's payments (into the Labour Market Fund), sick pay contributions, etc.) compared to the level appropriated in the Budget Act.]

We calculated the average tax rates using the data tables compiled by Tax and Financial Control Administration (APEH) from the income *tax returns of private individuals. The* exact results are presented in the table below.

Table 16

	2001	2002	2003	2004	2005	2006
Increase of productivity of the private sector	92.3	182.5	227.2	299.1	363.3	453.9
Rate cuts	1.1	2.4	2.7	–76.2	–108.1	–129.3
Average gross income increase, divergent from productivity, private sector	12.7	–3.5	5.6	17.0	17.8	11.9
Change in the number of employees in the private sector	3.4	1.3	9.0	4.5	7.5	6.3
Tax allowances in the private sector	8.2	19.6	–48.7	–0.4	6.8	14.1
Other factors in the private sector	28.6	–4.8	8.0	–39.3	–13.0	5.5
Nominal accumulated growth of personal income tax revenues	146.3	197.6	203.7	204.8	274.3	362.5
Baseline scenario: maintaining a GDP-proportionate level	80.4	169.4	249.4	331.3	391.9	462.8

Contributions

Table 17

	2000	2001	2002	2003	2004	2005	2006
Employer's social security contribution rate	33.0	31.0	29.0	29.0	29.0	29.0	29.0
Employer's Labour Market Funds contribution	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Membership of private pension funds, thousand people*	2193.0	2253.0	2226.0	2304.3	2403.4	2508.7	2608.7
Number of those that are not members of private pension funds, thousand people	1663.2	1615.3	1644.6	1617.6	1497.0	1392.8	1276.6
Members' PAYGO contribution rate	5.0	5.0	5.0	4.5	4.5	4.5	4.5
PAYGO contribution rate of those that are not members of private pension funds	11.0	11.0	11.0	11.5	12.5	12.5	12.5
Average PAYGO contribution rate, actual	7.6	7.5	7.5	7.4	7.6	7.4	7.1
Average PAYGO contribution rate, hypothetical**	7.6	7.6	7.6	7.5	8.0	8.0	8.0
Proportion of non-members, %	43.1	41.8	42.5	41.2	38.4	35.7	32.9
Employee's Labour Market Funds contribution rate	1.5	1.5	1.5	1.0	1.0	1.0	1.0

* Data from the Hungarian Financial Supervisory Authority

** Assuming a permanent membership proportion

We established two factors concerning the impact of private pension funds.

(1) On the one hand, during the whole of the period, the contribution rate to be paid to private pension funds by members increased from 6 to 8% (and the contribution to be paid to the state fund decreased from 2 to 0.5%), while the contribution rate to be paid by non-members to the state fund increased from 8 to 8.5%.

(2) On the other hand, the number of non-members, i.e. those who do not belong to private pension funds, dropped. We calculated the effect of the contribution rate change assuming that the proportion of fund members among those employed had remained the same as in 2000.

Regarding "other" contributions of a smaller value and sick leave, we may only consider the effective and not the nominal rates (i.e. the quotients of the contributions collected and the tax base). The exact results are presented in the table below.

Table 18

(million HUF)	2001	2002	2003	2004	2005	2006
Increase of productivity	213 088	436 695	569 759	783 752	959 654	1 180 370
out of which: in the government sector	57 557	129 306	172 564	246 480	294 240	349 674
in the private sector	155 530	307 389	397 194	537 271	665 414	830 697
Increase above the productivity of the private sector	42 508	59 701	127 958	130 587	137 668	90 928
out of which: in the government sector	21 103	65 577	118 221	100 060	105 111	69 097
in the private sector	21 405	–5 876	9 737	30 528	32 557	21 831
Rate change	–72 564	–158 440	–184 957	–191 785	–202 150	–209 137
out of which: in the government sector	–20 492	–48 626	–57 772	–61 849	–63 112	–63 783
in the private sector	–52 072	–109 813	–127 185	–129 937	–139 038	–145 354
Change in the number of employees in the private sector	5 680	2 131	15 708	8 016	13 798	11 495
Change in the contribution rate change paid by employees*	0	0	–2 566	14 147	14 700	15 002
Decrease in the rate of non private pension fund members	–2 612	–1 330	–4 996	–14 839	–24 477	–35 069
Other	30 276	113 063	126 970	102 067	148 433	173 458
out of which: in the government sector	–55 859	5 677	4 644	54 699	31 332	26 572
in the private sector	86 135	107 386	122 326	47 368	117 100	146 886
Nominal accumulated growth of contribution revenues	214 066	299 085	402 072	485 230	676 033	854 059
Baseline scenario: maintaining a GDP-proportionate level	134 522	283 468	417 211	554 394	655 779	774 415

* Assuming an identical private pension fund membership proportion

VAT

The changes in the main factors influencing VAT are presented in the table below.

Table 19

	2000	2001	2002	2003	2004	2005	2006
Disposable incomes, W	7926.3	9122.3	10168.1	11072.7	12246.4	13553.4	14161.4
Adjusted disposable incomes, Wc	7926.3	8906.5	9943.5	10321.3	11468.2	12605.2	13296.6
Household final consumption expenditure, C	7129.2	8208.5	9077.8	10120.5	10759.9	11589.4	12436.9
Adjusted household final consumption expenditure, Cc	7129.2	8014.3	8877.2	9433.8	10076.2	10778.6	11677.4
Effect of analysed factors, C/Cc*		1.02	1.02	1.07	1.07	1.08	1.07
Average VAT rate, actual**	17.1	17.1	17.2	17.3	19.1	19.1	16.6
Average VAT rate, hypothetical***					17.2	17.3	17.3

*Effects of increase of wage share, and state measures on disposable incomes

** Based on Consumer Price Index booklets

*** Based on Consumer Price Index booklets, without the effect of tax regulations

Table 20

	2000	2001	2002	2003	2004	2005	2006
VAT, accrual-based	1159.8	1251.0	1373.0	1539.9	1831.6	1856.5	1771.0
Simplified business tax			42.9	74.6	96.2	108.9	
VAT of household final consumption expenditure + households' investments, including simplified business tax	1004.8	1097.5	1215.0	1364.2	1627.5	1700.8	1626.6
Households' investments	40	47.5	51	56.4	58	58	59.6

(continued on the following page)

(continued from the previous page)

	2000	2001	2002	2003	2004	2005	2006
VAT on consumption	155	153.5	158	218.6	278.7	252	253.3
out of which: state	128.9	143.3	161.9	171.7	201.6	214.1	na
in the proportion of the GDP (%)	1.0	0.9	0.9	0.9	1.0	1.0	na
financial institution	33	33	34	43.6	na	na	na
other sectors	11	11	12	22	na	na	na

Among VAT revenues, we analysed those relating to household final consumption expenditure in detail. VAT of households investments signifies the VAT of purchased ready flats, while VAT related to constructions and reconstructions made by households, representing a higher proportion, is comprised in the VAT of household final consumption. For this reason, we dealt with the VAT of household investments together with the VAT of household final consumption.

The primary effect of the introduction of the simplified business tax in 2003 was a decrease in VAT revenues. In our calculation, we explained the *sum* of VAT of household final consumption, household investments and the simplified business tax through the factors that we deemed relevant.

In 2006, the total of VAT revenues from sources other than household final consumption and household investments are expected to be 0.1 percentage point lower than in 2000, the most significant item among *other consumption* is the VAT content of the non-wage operational expenditures of the general government, which, in a net perspective, does not influence the budget deficit. Incidentally, according to certain budgetary reports, the proportion of these was relatively permanent, i.e. 1%, of the GDP. (It needs mentioning that before 2003, the figures of VAT revenues derived from purchases of different budgetary institutions, presented in the budgetary closing accounts, somewhat differed from the values presented in the above-mentioned reports.) Before 2003, VAT revenues derived from financial institutions and from goods/services falling under activity-based tax exemption had solely been presented in closing accounts as estimated, not factual values.

Adjusted household final consumption, as presented in the table, belongs to a scenario in which households' disposable incomes would have been influenced by the wages in the private sector rising at the same pace as productivity, and would not have been boosted by the government measures analysed by us; while private individuals' willingness to consume (and save) would have the same as the actual level. We adjusted the actual values of disposable incomes, taking into consideration the effects of higher private sector wages and the state measures.

We calculated the effect of the social security measures affecting employees by multiplying net wage income by the difference of the contribution rates paid by employees effective in each year and those effective in 2000. As the total of employee's contributions rate has increased, disposable incomes have decreased.

When calculating the average VAT rate on household final consumptions, we relied on the estimation of the Hungarian Central Statistical Office for consumption basket weights. These are entered into the consumption price index with a two-year delay, so, for instance, the latest booklet in 2006 publishes data on the 2004 weights. Consequently, we had to make an own estimate concerning the average VAT rate regarding 2005–2006. We assumed that the yearly 0.04 percentage point shift of the consumption structure towards standard VAT rate products, which had been

experienced at the beginning of the period, continued. We used a table, that the specialist division of the Ministry of Finance compiled, providing an estimate of the VAT rate of the groups of goods and services in the basket of Consumption Price Index.

Table 21

	2001	2002	2003	2004	2005	2006
Effect of adjusted household final consumption expenditures	139.5	281.0	370.1	534.9	637.7	739.7
Effect of analysed factors*	25.2	24.7	82.6	84.8	95.8	84.0
Shift in the consumption structure	3.6	14.6	29.8	11.3	14.6	17.3
Rate changes, reclassifications**	0.0	0.0	0.0	131.9	137.9	–46.9
Other	–75.5	–110.1	–122.9	–140.1	–190.0	–172.2
Nominal accumulated growth of the VAT on household final consumption expenditures and private investments	92.7	210.3	359.5	622.7	696.0	621.9
Baseline scenario: maintaining a GDP-proportionate level	129.3	272.6	401.1	533.0	630.5	744.6

*Effect of increase of wage share, state measures on disposable incomes

** 2004: increase of the lower VAT rate, 2006: decrease of standard VAT rate; reclassification of books and electricity to standard rate in 2004

The table below presents the distribution of the 81.3 billion HUF amount of the VAT revenues derived from the analysed factors.

Table 22

	2001	2002	2003	2004	2005	2006
Factors influencing disposable incomes, %	100%	100%	100%	100%	100%	100%
Growth of average gross wage income above productivity in the private sector	52.3%	–8.6%	14.6%	25.0%	24.6%	20.1%
Increase of the number of private sector employees	2.4%	0.8%	1.8%	0.9%	1.2%	1.0%
Political measures increasing pension expenditures	15.8%	33.5%	16.5%	22.4%	23.6%	28.9%
Family supports	13.1%	11.1%	5.9%	0.3%	–0.5%	5.1%
Housing subsidies	3.4%	10.5%	12.7%	18.8%	19.9%	17.8%
Average gross wage income increase and change in the number of employees in the public sector*	19.1%	66.9%	39.6%	29.2%	25.7%	19.7%
Measures relating to personal income tax**	–6.0%	–14.1%	8.9%	14.5%	15.5%	19.2%
Measures relating to employee's social security contributions	0.0%	0.0%	0.0%	–11.1%	–10.0%	–11.8%

*Including the indirect effect of wage increases on additional pension increases

** Effect of changes in tax rate and tax allowances, both in the private and in the government sectors

Other taxes on consumption

Table 23

	2000	2001	2002	2003	2004	2005	2006
Consumption taxes besides VAT	603	641	701	799	898	917	1 041
Consumption taxes besides VAT, adjusted*	506	534	587	679	698	728	827

*Deducting the estimated effect of the rate increases due to the EU accession and the excise duty of fuel purchased by companies

We adjusted the amount of excise duty revenues, taking into account the effect of the tax rate increases necessitated by the EU accession as we discuss this factor among the budgetary impacts of the EU accession.

Excise duty is not only paid by households, but also, to a smaller extent, by companies, when purchasing fuel. Households pay for their fuel purchases from their disposable incomes, whereas companies purchase fuel as a part of their intermediate consumption. Accordingly, we divided other consumption taxes into two parts, explaining them in different ways.

Table 24

Private component	2001	2002	2003	2004	2005	2006
Household final consumption expenditures, adjusted	60.9	119.7	164.8	206.6	252.4	310.8
Effect of analysed state measures and wage share increase	12.4	12.2	41.4	39.2	44.2	42.5
Other*	–45.8	–50.8	–33.5	–54.2	–75.0	–32.5
Nominal accumulated growth of consumption taxes besides VAT	27.5	81.1	172.6	191.6	221.7	320.9
Baseline scenario: maintaining a GDP-proportionate level	60.9	119.7	164.8	206.6	252.4	310.8
Business component	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
GDP	12.3	25.1	36.2	50.3	55.3	65.4
Intermediate consumption of companies	–3.1	–13.1	–13.2	–14.8	–13.0	–11.0
Other	2.0	5.5	0.8	11.5	–5.7	–7.9
Excise duty of fuel purchased by companies	11.2	17.5	23.8	47.0	36.6	46.4

* Lack of revaluation and problems of tax collection

We did not undertake to separate the effect of the efficiency of tax collection from that of other factors; However, other available information suggests that smuggling had gained ground, which contributed to the decrease of taxes. The EU accession and the opening of the borders definitely played a part in this, which would have been possible to be counterbalanced by enhancing the efficiency of the tax authority. On the other hand, excise duty collection underwent significant positive changes in 2006.

Health care contribution

Table 25

	2000	2001	2002	2003	2004	2005	2006
Health care contribution in the private sector	122.6	141.1	137.3	115.4	111.0	93.7	58.1
Flat rate of lump sum ealth care contribution HUF/person	3 900	4 200	4 500	3 450	3 450	3 325	1 950

Between 2000 and 2002, the government increased the flat rate of the lump sum health care contribution from 3900 to 4500 HUF, then significantly decreased it in 2003 (from 4500 HUF to 3450 HUF), and then kept it at the same level until November 1 2005, when the amount of the health care contribution was further decreased to 1950 HUF.

Table 26

	2001	2002	2003	2004	2005	2006
Employment in the private sector	0.6	0.2	1.5	0.7	1.1	0.7
Change in the flat rate amount of health care contribution	17.9	14.5	–8.7	–12.3	–30.0	–65.2
Nominal accumulated growth of lump sum health care contributions	18.5	14.7	–7.2	–11.6	–28.9	–64.5
Baseline scenario: maintaining a GDP-proportionate level	15.8	33.3	48.9	65.0	76.9	90.9

The effect of the EU accession and the customs revenues

The calculations are based on net customs revenues, i.e. the amount of customs payments decreased by the administration costs of the customs organisations and increased by the compensation for customs collection costs received from the EU as of 2004. In Hungary, customs revenues had been on the decrease in GDP even before the EU accession (nominally) due to the continuous pre-accession decrease of customs tariffs and the WTO agreements, this revenue type ceased to exist on May 1 2004, the date of the accession.

We quantify savings in agricultural expenditures compared to what budgetary burden they would have caused if the year 2000 level of these expenditures in proportion of the GDP had been maintained. This is to be compared with how much we actually spent on this purpose from domestic funds.

EU agricultural supports and the Hungarian budget

Domestic funds between 2000 and 2003: To quantify the supports provided for the Hungarian agriculture we based our calculations on the items of agricultural supports in the central budget balance (including market access and agricultural production supports). This is *cash-based* data, and the sums lagging from one year to another were not negligible in this period. But there were no accrual-based figures available. However, it is not a big mistake to proxy accrual with cash-flow data, one can assume that the spreading from a given year equalled the payments effectuated in the next.

Domestic funds after 2004: The accrual-based expenditures covered from domestic sources are not very transparent. The expenditures – together with other items described in the chapters above – are contained in the item "running expenses and income supports" in the Ministry of Agriculture and Rural Development chapter in a cash-based framework. It contains the subsidies *paid out* in the given year, provided from domestic funds. The so-called top-up (national supplement) is to be found among these. According to the calculations, market access and agricultural production supports – still committed for 2004, similarly to the previous years – accounted for a total of 37.3 billion HUF in an accrual-based framework; while the accrual-based top-up accounted for 85.4 billion HUF. As for the years 2005–2006, we estimated the size of the top-up ourselves – as no similar Hungarian Central Statistical Office tables were available. We assumed that the top-up closely followed the direct payments received from the EU: the top-up provided from domestic funds in 2004, 2005, and 2006 accounted for 30%, 30% and 30% (regarding the direct payments due for EU Member States as 100%), while direct producer supports from the EU had been steadily growing and accounted for 25%, 30, and 35% in the above three consecutive years, respectively. It was possible to calculate the accrual-based top-up in 2005 and 2006 based on the accrual-based size of the direct producer supports.

EU subsidies: EU subsidies (direct producer subsidies, export subsidies, domestic market subsidies, and subsidies relating to intervention, reimbursed by the EU) first appeared in 2004. These are (approximately) accrual-based figures, which can be found in the tables presenting data on EU relations in the budgetary closing accounts of the given year.

Table 27

(million HUF)	2000	2001	2002	2003	2004	2005	2006
1. Contribution to the EU budget	0	0	0	0	119 721	186 645	199 182
2. Compensation	0	0	0	0	42 813	8 458	7 669
3. Customs and agricultural duties	137 730	125 013	129 341	132 638	39 884	0	0
4. Administration costs of customs organisations	6 011	7 616	8 244	8 473	7 846	7 851	6 678
5. Compensation for customs collection costs	0	0	0	0	4 487	8 857	8 400
6. Compensation for sugar levy collection costs	0	0	0	0	0	516	418
7. Excise duty adjustment to conform to EU norms					56 417	56 417	71 280
Balance of payments (contribution + Traditional Own Resources) to EU budget and compensations	*131 720*	*117 397*	*121 097*	*124 166*	*16 034*	*–120 248*	*–118 093*
7. Agricultural subsidy from domestic funds	97 065	119 447	120 580	128 873	122 744	92 910	87 579
Market access and agricultural production subsidy	97 065	119 447	120 580	128 873	37 313		
Top up (accrual-based)					85 431	92 910	87 579
memo: Current expenditures and income supports, Ministry of Agriculture and Rural Development chapter					90 869	131 452	110 520
Top up, cash-based, information from Ministry of Finance					0	87 571	85 000
8. Agricultural subsidies from EU funds					78 502	123 451	145 925
Export subsidies					855	10 399	9 250
Domestic market subsidies						6 519	13 250
Direct producer subsidies from the EU**					77 647	92 910	102 175
Costs relating to intervention***					0	13 623	21 250
7.+8. Total agricultural subsidies	97 065	119 447	120 580	128 873	201 246	216 361	233 504
11. Total agricultural subsidies, hypothetical****	97 065	109 560	123 395	135 818	148 560	157 977	168 997
B = 7–11# Savings in agricultural expenditures		*9 887*	*–2 815*	*–6 945*	*–25 816*	*–65 067*	*–81 418*
A. + B. Net effect of EU-relation and customs	**131 720**	**107 509**	**123 912**	**131 110**	**41 850**	**–55 181**	**–36 675**
In proportion of the GDP	**1.0**	**0.7**	**0.7**	**0.7**	**0.2**	**–0.3**	**–0.2**

* Net customs revenue; A = -1.+2.+3.-4.+5.+6.+7.

**Accrual-based

*** Compensated by the EU

**** If the GDP-proportionate 2000 level had remained unchanged

Difference between the actual amount of agricultural subsidy from domestic funds and Row 11

The table shows that with the sole exception of 2001, the budget provided somewhat lower agricultural supports even prior to the EU accession, and after the EU accession it was possible to achieve considerable savings. We explain the decrease of domestic agricultural subsidies between 2000 and 2006 with the appearance of EU funds. Withholding agricultural subsidies from domestic funds diminishes expenditures due to the EU payments significantly, approximately halving them.

Two reasons were quoted to explain the changes in the VAT system in 2004 officially (i.e. in the budgetary closing accounts): EU law harmonisation and the need to maintain the budgetary equilibrium subsequent to the EU accession. Increasing the reduced 12% VAT rate to 15%, reclassifying the VAT rate of electricity from reduced 12% to standard 25%, and terminating VAT deductibility on subsidies relating to new investments and the non-wage operating expenditures of the general government are the measures to maintain the equilibrium of the budget, these measures generated a total surplus revenue of 137 billion HUF, which, according to our calcula-

tion, significantly exceeded the direct costs of the EU accession in 2004 and even in the next two years if we equate those costs with item B in the table. If we disregard the savings opportunities in agriculture and compare the above-mentioned VAT measures to item A, we find that they provided full coverage for the budget deficit directly deriving from the EU relation only in 2004.

Table 28

	2001	2002	2003	2004	2005	2006
Customs	–14.3	–10.6	–7.6	–95.2	–130.7	–130.0
Net budget transfers in the EU relation	0.0	0.0	0.0	–76.9	–177.7	–191.1
Excise duty rate adjustment to conform to EU norms	0.0	0.0	0.0	56.4	56.4	71.3
Savings in agricultural expenditures	–9.9	2.8	6.9	25.8	65.1	81.6
Nominal accumulated changes of the EU relation	–24.2	–7.8	–0.6	–89.9	–186.9	–168.2
Baseline scenario: maintaining a GDP-proportionate level	17.0	35.7	52.6	69.9	82.7	97.9

Interest expenditures

All the data without any exception is derived from the budgetary closing accounts and other Ministry of Finance sources.

Table 29

	1999	2000	2001	2002	2003	2004	2005	2006
Maastricht debt	6 963	7 339	7 953	9 574	10 982	12 296	13 582	15 947
denominated in foreign currencies	2 861	2 852	2 601	2 418	2 663	3 216	3 995	4528
denominated in HUF	4 102	4 488	5 353	7 156	8 319	9 081	9 587	11 419
Total net interest expenditures		611	597	619	703	825	844	841
net interest expenditures paid in foreign currencies		178	154	122	130	126	145	144
net interest expenditures paid in HUF		433	443	498	574	699	699	696
Implicit interest rate		8.5%	7.8%	7.1%	6.8%	7.1%	6.5%	5.7%
on debts in foreign currencies		6.2%	5.7%	4.8%	5.1%	4.3%	4.0%	3.4%
on debts in HUF		10.1%	9.0%	8.0%	7.4%	8.0%	7.5%	6.6%

Values according to the basic scenario calculated

Table 30

	2001	2002	2003	2004	2005	2006
Primary deficit, under basic scenario	–362.44	–408.20	–449.30	–491.45	–522.60	–559.06
Stock-flow adjustment, basic scenario, without privatisation receipts	–14.17	80.01	89.06	138.20	–29.22	–82.00
Total net interest expenditures, under baseline scenario	611.6	629.8	653.8	677.0	703.4	714.8
Total deficit, under baseline scenario	249.19	221.55	204.47	185.59	180.78	155.72
Debt at the end of the year, with total deficit under baseline scenario, without privatization receipts	7 574.46	7 876.03	8 169.56	8 493.35	8 644.91	8 718.63
Average debt, with total deficit under baseline scenario, without privatisation receipts	7 456.95	7 725.25	8 022.79	8 331.46	8 569.13	8 681.77
Privatisation receipts	0.00	0.00	41.98	166.54	403.80	268.70
Debt at the end of the year, with total deficit baseline scenario, with privatisation receipts	7 574.46	7 876.03	8 127.58	8 326.81	8 241.11	8 449.94
Average debt, actual, with privatisation receipts	7 646.36	8 763.53	10 277.82	11 639.02	12 939.28	14 764.68
Debt at the end of the year, actual, without privatisation receipts	7 953.27	9 573.78	11 023.83	12 504.72	14 194.68	16 828.02
Average debt, actual, without privatisation receipts	7 646.36	8 763.53	10 298.81	11 764.28	13 349.70	15 511.35

The average debt stocks are calculated as the arithmetic averages of the respective end of year data.

Table 31

	2001	2002	2003	2004	2005	2006
Effect of decrease of foreign currency interest rate	–40.73	–108.31	–95.84	–175.42	–212.16	–293.88
Effect of changes in interest premium	–24.73	–39.48	–89.05	–8.76	–27.76	–44.65
Effect of changes in the currency composition of the debt stock	11.40	31.10	39.08	52.16	43.98	42.33
Effect of GDP growth	73.16	147.54	220.60	303.30	355.49	406.90
Decrease of GDP-proportionate debt under baseline scenario	–63.57	–116.05	–162.14	–212.96	–242.44	–283.65
Effect of budgetary and political decisions	25.48	77.19	149.49	218.28	282.79	367.33
Effect of non-budgetary factors	5.38	16.31	31.58	46.12	59.75	77.61
Effect of privatisation revenues	0.00	0.00	–1.44	–8.88	–26.77	–42.51
Nominal accumulated growth of interest expenditures	–13.61	8.31	93.72	222.73	259.66	271.99
Baseline scenario: interest expenditures cleaned of the effect of political deficit increase	0.61	18.74	42.75	66.03	92.36	103.75

Notes

[1] Upon announcing the introduction of the adjustment package in the summer of 2006, the government officially forecast a deficit of 10.1%, and publicly announced that based on the calculations carried out at that point of time, the deficit would have accounted for 11.6% of the GDP without the adjustment. Now the year in question is over, and in retrospect we find that the deficit did not actually amount to 10.1% but only 9.2%. It does constitute a problem what the deficit figure could have been without the adjustment program. As it was due to those types of revenues and expenditures that had not been affected by the adjustment package that the balance turned out better than expected, we assume that a deficit of not 11.6% but one that is 0,9 percentpoint lower (i.e. of 10.7%) would have arisen based on the basic scenario.

[2] The estimated value of the output gap was 0.81 in 2000 and 1.23 in 2006, which may cause a difference of a size of approximately 0.1 percentage point between the 2006 and 2000 deficits. However, it constitutes a serious problem that the production function-based method measures the effect of the output gap on the budget imprecisely as, firstly, it is not the cyclical changes of GDP but of the tax bases that the budget is directly influenced by, and, secondly, the method fails to take into account the impact of the budgetary policy on the economic situation, which, however, was rather significant in the period examined. (See Kiss, P. – Vadas: 2004 and Kiss, P. – Vadas: 2005.) A unified macro-fiscal model may provide the only proper solution in this case, too.

[3] We only gained one-off expenditure items in respect of 2006 in this manner. Still, we thought that it would be a serious mistake to include the full, realised expenditures up until 2005. (For lack of data on actual service provision, no estimated service value is available.)

[4] Logarithmic break-down is based on the following identical equation:

$$\left.\begin{array}{l} Y_0 = \prod_{i=1}^{n} X_{i,0} \;\Rightarrow\; \ln Y_0 = \sum_{i=1}^{n} \ln X_{i,0} \\ Y_1 = \prod_{i=1}^{n} X_{i,1} \;\Rightarrow\; \ln Y_1 = \sum_{i=1}^{n} \ln X_{i,1} \end{array}\right\} \Rightarrow \Delta \ln Y = \sum_{i=1}^{n} \Delta \ln X_i \;\Rightarrow\; \Delta Y = \sum_{i=1}^{n} \left(\frac{\Delta \ln X_i}{\Delta \ln Y} \Delta Y \right)$$

[5] Each letter could denote different categories depending whether they are included as a basic sign, in subscript or in superscript.

[6] In this study, the terms 'public sector' and 'government' are used as synonyms, by which we mean public finance, in the legal sense of the word, this category includes local authorities but excludes state-owned enterprises.

[7] The minus and the plus of the numerical results below should be interpreted from the point of view of deficit, this means that the impact on both the expenditure and revenue side is positive if it adds to the deficit and it is negative if it reduces it.

[8] In practice, indexing takes place as follows: The Swiss index, which is used for the calculation of pensions paid from January to October, contains the 'general' consumer price index that is among the macro-economic assumptions of the budget bill; in October an official forecast is made relating to the

expected value of annual pensioners' consumer price index and the National Health Service pays the corrected amount for the January–October period together with November's pension.

[9] However, it raised the debt stock, therefore its impact on interest expenses should be taken into account in 2006 (see the paragraph on interest expenditures).

[10] There exists a special subsidiy to patients entitled to nearly free or free national health service treatment that is not included in the medicine expenditures, their GDP-proportionate volume was nearly the same in 2000 and in 2006, and its fluctuation in this period was negligible.

	2000	2001	2002	2003	2004	2005	2006
Pharmaceutical expenditure for patients that receive medicines free of charge,							
excluding VAT	21 733	24 492	29 266	32 304	31 887	35 134	35 369
in % of GDP	0,16	0,16	0,17	0,17	0,15	0,16	0,15

[11] Although the basic deal – the housing loan – exists for several years, the taxation rules may be changed every year, so it does not mean a several years commitment for the budget.

[12] NA Zrt, and ÁAK Zrt. are part of the statistical government sector, so the management of the state subsidies to the motorway construction works does not cause any problems.

[13] MOL = Hungarian Oil and Gas, MVM = Hungarian Power Companies, MÁV = Hungarian State Railways.

[14] We do not consider as 'negative' savings or 'expenditure' the profit enhancing effect of the administrative price control.

[15] We would like to note that the sale price of the Nuclear Power Plant of Paks has been much lower than the national average. As the power generated by the nuclear power plant could be sold – in theory – at the price of a power plant that operates with the highest costs, the relative loss created by the difference between the theoretical price and the "allowed" price for Paks could also be considered as a quasi-fiscal activity. Although we were unable to compile the complete time sequence for this, certain calculations indicate that the profit deterioration of the nuclear power plant was approx. HUF 80 billion in 2004, because of the cheap electricity. This also proves that the methodology of the calculation of the quasi fiscal activities may significantly influence the result.

[16] The net operating profit is the difference between the gross operating profit and the depreciation. Surprisingly, the growth of depreciation is less than that of the gross operating profit, which results in the dynamic growth of the tax base. If the depreciation figures that are based on experts' estimates regularly underestimate the real depreciation, this would cause too a high value of the other factor.

[17] This component was in the range of 0.5–0.6 percent of the GDP in the examined period.

[18] We do not undertake the examination of the effects of the legal tax rates, the limits of the categories and the changes in the distribution of incomes.

[19] That only took place in the years 2004–2006 in accordance with the Treaty of Accession.

[20] It can also be observed that the government has made certain efforts to counterbalance the overspending induced by itself through restrictions in other areas, this well explains the general public's complaints against governmental restrictions despite the overall loose budgetary policy. However, these restrictive measures have proved largely insufficient compared to the extent of overspending.

[21] Appropriations for tourism.

[22] See Appendix B

[23] Moreover, this data table contains net (i.e. values decreased by tax allowances) and not gross income tax data. We have no accurate data on the distribution of tax allowances between the private and government sectors.

LITERATURE

AKAR, L. (2006): The Economic Policy Turnaround and the New Convergence Programme, *Public Finance Quarterly, Number 4*

CSILLAG, I. – MIHÁLYI, P. (2006): Double Binding: 18 Months of Stabilisation and Reforms, *Global Knowledge Foundation*

P. KISS, G. – VADAS, G. (2004): Mind the Gap – Watch the Ways of the Cyclical Adjustment of the Budget Balance, *MNB Working Papers, Number 7*

P. KISS, G. – VADAS, G. (2005): Keep Minding the Gap – International Comparison of the Cyclical Adjustment of the Budget Balance, *MNB Working Papers, Number 4*