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Comparison of the Redistribution Level and Structure of Functional Expenditure in the Visegrád Countries

SUMMARY: Our study aims to compare the level of redistribution, and expenditure structure of the Visegrád countries in the period between 1995–2010. For the purpose of comparability, the new methodology presented in the study filters out those components of total expenditures, which are exogenous in the short term from the perspective of economic policy makers. Of these, the most significant are the interest payments determined by the level of indebtedness and interest rates, tax payments within the general government, and EU subsidies running through the budget. Beyond this we defined a structural indicator for medium term expenditure developments, which filters cyclical effects from the corrected data, and also spreads the government's capital expenditures out within the electoral cycle. The disaggregated figures highlight that compared to the other countries of the region, the excessive level of expenditure was increased by the growth of social expenditures in the period between 2002–2006 in Hungary. Afterwards, cuts were made to the additional expenditure by reducing public health care and general public services expenditure. The total adjusted Hungarian expenditure level fell short of the regional average in 2010. At the same time, Hungary had the highest level of social expenditures and the lowest level of healthcare expenditures in the region.

METHODOLOGY

When someone compares essentially non-comparable items they are said to compare apples to oranges. The GDP-proportionate redistribution levels of individual countries, i.e., the income and expenditure reported in official statistics comprise non-comparable items. This assertion might sound surprising, because the very purpose of statistical accounting is to ensure comparability across countries and periods. The reasons behind the failure of this effort with regard to GDP-proportionate redistribution levels are twofold.

On the one hand statistical data consistently adhere to the principle of gross accounting, i.e., the general government balance is determined on the level of gross expenditure and consolidated gross revenue. As a result, the various levels of the distribution of production and income become separately comparable within the overall revenue and expenditure. That is why it is not possible to net wages in the public sector, because they are paid out at the level of production, but only show up as tax and

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contribution income at the level of income distribution. When, however, we seek to find out how much the state spends overall in terms of its effects on the deficit, it is useful to filter out all accumulations of gross accounting that result from the separation of production and distribution of income.

On the other hand, the comparability of GDP-proportionate levels – across periods and countries – is hindered by volatility related to the economic cycle in terms of the GDP, the changes in debt levels and yields in terms of interest expenditure, and volatility that can be linked to the election cycle in terms of capital expenditure. The volatility of the GDP and interests may obviously not be adjusted for in official statistical accounting, and only limited means are available for the same in terms of capital expenditure. That is because for the part of capital expenditure that is related to the subsequent settlement of the cumulated debts of state owned companies the issue of re-categorising these companies as public sector companies arises. According to the pertinent statistical methodology, this is, however, only possible if less than half of the company's expenditure is covered by sales revenue generated on the market. If this is the case, their sales revenue and expenditure increase the revenue and expenditure of the state, while their losses have a continuous negative effect on the balance not just in the moment when their debt is assumed.

This study makes several adjustment suggestions in connection with these distortions, and these will be elaborated in the next part of the chapter on methodology. The objective is to make the levels of re-distribution and expenditure structures of the four Visegrád countries, the Czech Republic, Poland, Hungary, and Slovakia comparable through these adjustments.[1] In addition, the adjusted revenue-expenditure dynamics of these countries might also make it easier to ascertain the scale of the income and expenditure measures taken in the years under review.

Tax Adjustments

The tax content of government expenditure is the largest of all the balance neutral adjustments. We used an estimate for the 1995–2007 period to gauge the effect of factors hindering comparability, resulting from the disparity of tax schemes (P. Kiss et al., 2009), which we then extended to cover the 2008–2010 period. For Hungary we used our own estimates; for Poland we used *Tomasz Jêdrzejowicz's* (Narodowy Bank Polski) estimate, and for Slovakia *Jana Jirsákova's* (Národná banka Slovenska) estimate was used. For a comparable estimate for the Czech Republic between 1995 and 2010 we used *Pavla Netusilova's* calculations (Èeské Národní Banka). The study we relied upon used Eurostat statistics as a starting point, which were supplemented by additional official data and own estimates. For the detailed list related to the source of the various adjustments, see *P. Kiss et al.,* 2009, *Table 1, p. 20*. In the case of tax adjustments, we followed the steps recommended by the study.

First, adjustments are made for the direct tax content of government expenditure, i.e. income tax and contributions paid after wages and individual transfers. Similarly, we deduct indirect taxes, i.e. the general governments' investment expenditure, its purchase of goods and services, VAT paid after household transfers, as well as excise and vehicle registration tax. These may be interpreted in a way that the government puts money from one pocket into the other. In countries where tax rates are lower, the tax "paid by the government to itself" – such as total revenues and total expenditures – is also lower. However, the relatively higher rate of adjustments in Poland is also compounded by the fact that in Poland – contrary to any of the other Visegrád countries – pension benefits qualify as taxable income. As a result, current transfer levels can only be compared to one another, if expenditure in

Poland also only contain net pension benefit expenditure.

Afterwards, a smaller tax adjustment is made. Namely, in the case of Slovakia the family tax allowance available on income tax since 2002 – which is independent of the level of the tax liabilities, i.e., may be negative as well – is considered a transfer as opposed to an income reducing item. Eurostat only books a transfer if actual payment takes place and only to the extent to which the negative tax liability exceeds other tax liabilities. In compliance with other international recommendations, our method not only books paid negative tax, rather the full amount of negative tax, regardless of whether it is partially covered by a payment obligation.[2]

Finally, an additional adjustment is made with regards to the employers' mandatory sick pay, required by the government. The employer is required to pay for employees' sick leave for a certain number of days. Afterwards the employee receives sick pay, at which time the employer is required to pay a sick pay contribution that partially covers the sick pay disbursed to the employee. While in the statistical sense of the word, the sick pay contribution continues to qualify as a public due, the mandatory sick leave benefits payments do not. This would be tantamount to a scenario, where the government would cover this portion of the sick leave benefits from the taxes collected for this purpose from the employer. In other words, in the interest of comparability both should be featured as tax and expenditure in the adjusted revenue and expenditure.

As *Chart 1* shows, the weight of the tax adjustments is between 5 and 11 per cent of the GDP, and while it does not prejudice the comparability of the Hungarian and Polish figures, in the case of the Czech Republic and Slovakia, the adjustments display a certain disparity in terms of their level and trajectory.

Figure 1

THE EFFECT OF TAX ADJUSTMENTS (GDP %)

Source: P. Kiss, G. – T. Jedrzejowicz – J. Jirsákova (2009)

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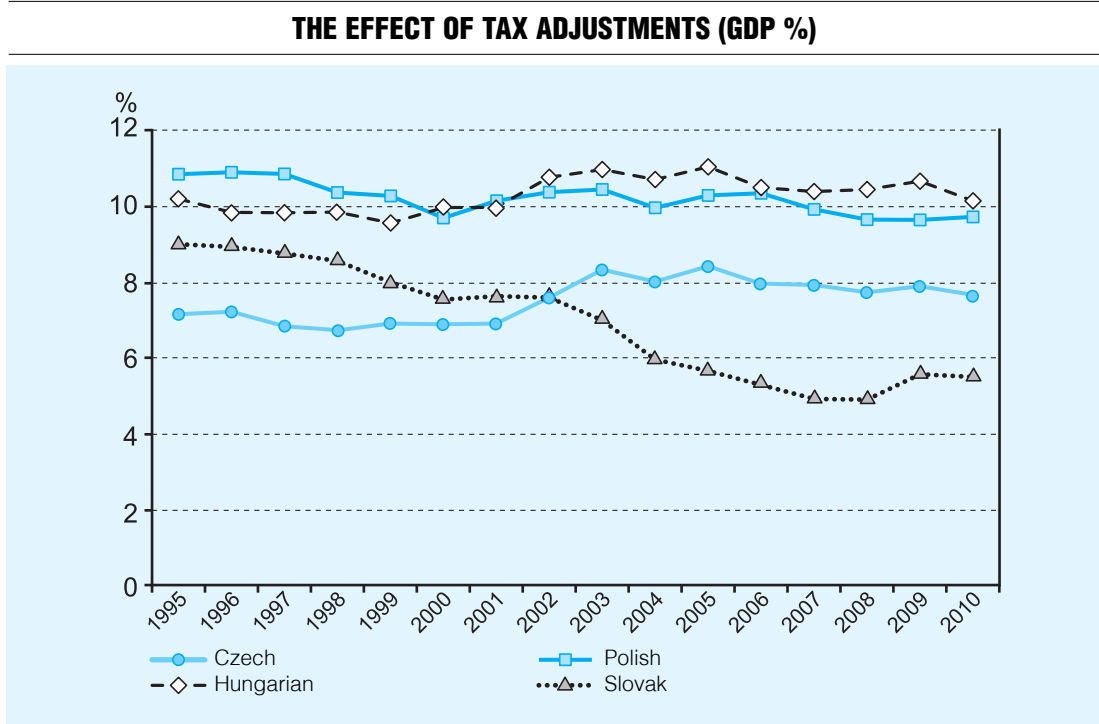
Adjustment of non-tax incomes

In addition to tax incomes other revenues and expenditure should also be adjusted in a balance neutral manner to improve comparability. Such items include the funds received from the European Union, the market (sales and fee) revenue generated by the government, as well as the use of these items on the expenditure side.

As previously mentioned in connection with the volatility of capital expenditures, loss-making state run companies are often left out of the statistical scope of the government, because they can only qualify for this category if less than half of their expenses are covered by market sales revenue. One of the reasons behind this is that market revenue includes state grants, which are extended to every comparable service provider alike. As a result, it is not unusual in certain countries for whole industries (such as healthcare) to be removed from the government sector, while in other countries the same industries remain in the government sector. In the latter case, their sales revenue qualifies as government revenue, and when it is spent qualifies as government expenditure. If, however, these are removed from the government sector, their expenditure is only reported as government expenditure to the extent of the government support provided to them. As a result of the fact that the proportion of government sector institutions involved in public services is not the same in all of the Visegrád countries, government sales and fee revenue volumes also differ in these countries. In the interest of ensuring the comparability of expenditure levels, all sales revenues are deducted. However, this adjustment cannot be made for every expenditure function (for example health care), because the figures are not available in a functional break-down.[3]

Countries also tend to differ greatly in terms of what proportion of EU funds are used for government projects and what proportion is used by the corporate and retail sectors. The different, above mentioned definition of the governmental sector might be problematic here, because for instance the EU grants provided for railway development projects might represent government revenue and expenditure in one country, and corporate revenue and expenditure in another country. As is the case with sales and fee revenue, EU revenue and expenditure will also be deducted from the statistical figures in order to ensure the comparability of expenditure levels. This operation cannot be performed for certain expenditure functions, because these figures are also not available in a functional break-down.

As you can see in *Figure 2*, the weight of these adjustments is between 0.5 and 4.5 per cent of the GDP, and while it does not impact the comparability of Hungarian and Czech figures, the same comparison is prevented in the case of Polish and Slovak figures both in terms of the level and trajectory of the figures.

Adjustment of interest expenditures

The adjustments so far have simultaneously involved the expenditure and income sides, which is why they had no effect on the balance. We have, however, made an additional adjustment for interest as well, as a result of which the expenditure-revenue level can be represented at the level of the primary balance. The interest expenditure complicates comparison in that it is not influenced by fiscal policy decisions, rather by debts accumulated in the past and the risk premiums reflected in the credit default swap spreads of a country. However, in addition to the size of public debt and the yields of government securities and treasury bills denominated in the domestic currency, the extent of interest expenditures may also be influenced by the structure of financing. In Hungary, for instance, the reason interest expenditure did not increase
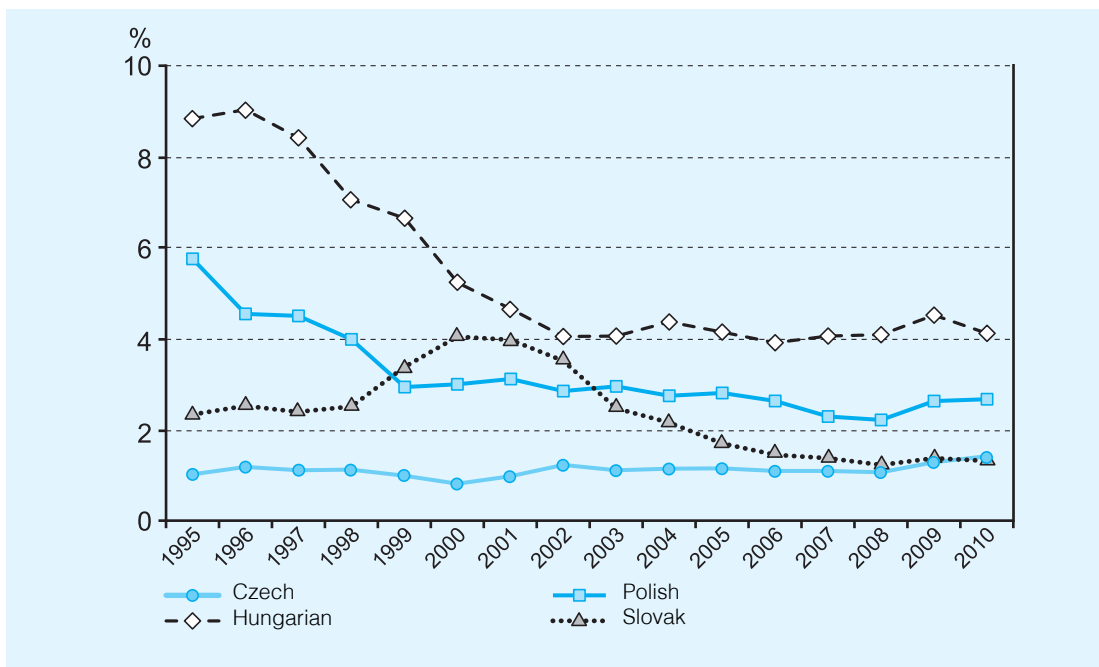
Figure 2

ADJUSTMENT OF NON-TAX INCOMES (GDP %)
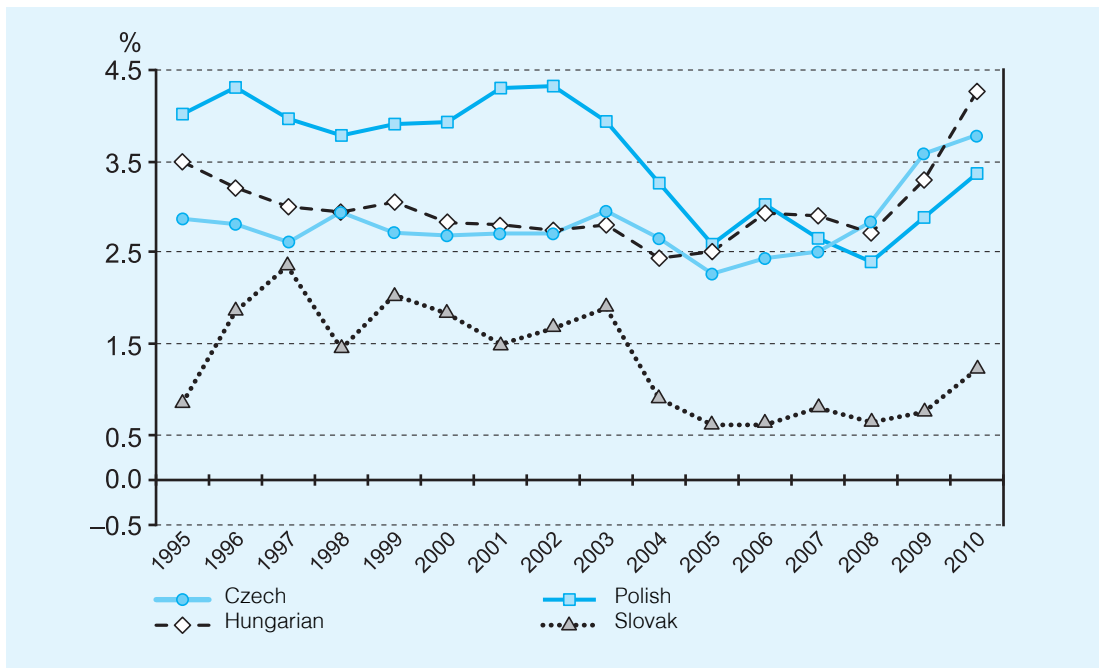
Source: P. Kiss, G. – T. Jedrzejowicz – J. Jirsákova (2009)

Figure 3

INTEREST EXPENDITURE (GDP %)

Source: Eurostat

in the 2000s despite rising public debt and Hungarian forint yields is because in the meantime the ratio of lower yield foreign currency financing was continually increasing.

The comparison of expenditure is more favourable for Hungary, if interest expenditure is not taken into consideration. This would, however, produce an overtly optimistic picture, because in order to be able to deliver the medium-term balance target (low deficit), it seems necessary to offset higher interest expenditure – presumably in the medium-term as well (as shown by the tendencies presented in *Figure 3* interest expenditure may be downscaled to some extent over a period of several years, but it is conditional upon the reduction of public debt and CDS spreads). With regards to offsetting a higher level of interest expenditure in the medium term, it is not entirely obvious whether this off-setting should be performed through reducing primary expenditure, because revenue increases may also play a part (for instance, by way of eliminating tax avoidance).

Figure 3 shows that at the end of the period interest expenditure as a ratio of the GDP was around 4 per cent in Hungary, below 3 per cent in Poland, and a little over 1 per cent in the Czech Republic and Slovakia. In addition, it seems that adjusting for this item brings expenditure levels closest to one another.

Smoothing out capital expenditure

The observation has been made that the capital expenditure of the government – i.e. the capital transfers provided for government investment projects, corporate investment projects and the capital transfers designed to settle the quasi-fiscal debts of state run companies accumulated in the preceding years – is usually higher in election years than in other years. Considering that the capital transfers made to settle current corporate investment projects and resolve the

indebtedness of state run companies may not be separated due to a lack of information, the volatility of the capital expenditures might be smoothed out by applying a retrospective moving average for a period corresponding to the electoral cycle. Naturally, we already performed the tax adjustments before smoothing out the volatility, as government investment projects are subject to VAT payment.

Due to the volatility of capital expenditures comparing certain years in isolation might be misleading (P. Kiss – Szemere, 2009). Therefore, for example, in Hungary in election years it was often not only the debt settlement of state run companies that took place, but municipal investment projects also tended to peak during this time as well. Naturally, the moving averaging could be used to track the debt settlement of state run companies, but that does not guarantee that the corporate expenditures that led to the accumulation of the debt actually took place at that pace. Therefore, in order to check how realistic the four-year retrospective moving average was, we undertook to perform alternative calculations for Hungary. That is because the figures and estimates on the annual development of expenditures leading to the accumulation of debt and their subsequent appearance among government capital expenditures are available to us on the basis of the MNB's background calculation of the supplemented deficit indicator. As a result, we have divided capital expenditures into two groups: one group in which capital expenditures could be spread out on the basis of the MNB's calculations and another group where this was not possible. The latter was then smoothed out using the same four-year retrospective moving average as described in our core methodology. When the two results were added the alternative indicator became comparable to the result we would arrived at had we only adjusted the overall capital expenditure by the moving average.

Figure 4

EFFECT OF SMOOTHING OUT CAPITAL EXPENDITURES (GDP %)
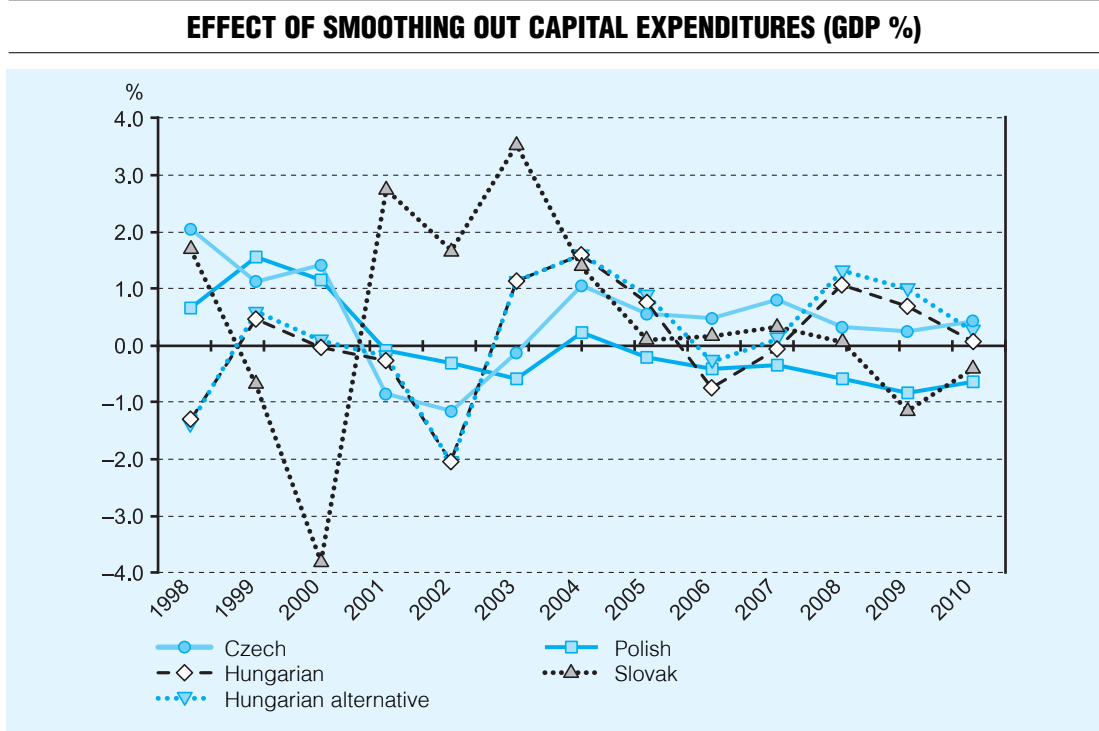
Source: Eurostat, own calculations

Figure 4 shows that the result of moving averaging and the alternative calculations – with the exception of a few years – come very close to one another. It can also be established that the largest adjustment – equivalent to +/– 4 per cent of the GDP – was carried out in Slovakia before the period starting with 2005. In the other countries the effect of the volatility remained in the +/–1 per cent range. We consider smoothing out the capital expenditure an alternative method, and describe the effect thereof on the overall expenditure levels, but have not adjusted for it with regard to the functional structure we started examining from 2002 onwards.

Adjustment of GDP fluctuation

The comparison of levels measured as a proportion of the GDP might be distorted by the cyclical volatility of the GDP, especially during the recent economic downturn. That is because if expenditures grew at a level corresponding to economic growth trends, in other words if the the automatic stabilisers worked correctly, then the expenditure/GDP ratio increased relative to dropping GDP levels. In contrast, comparison to the trend GDP would result in a constant expenditure ratio. The trend GDP renders both the time series of the individual countries and the comparison across countries more meaningful. On the other hand, one of the disadvantages of using trend GDP is that its definition is rather uncertain and that a significant revision may occur, especially in terms of the data of the last couple of years following the receipt of new nominal GDP data. That is why division by the trend GDP was used as an alternative method. This study aims to describe the effect of thereof on overall expenditure levels. We have not, however, adjusted the functional structure for it.

Figure 5

EFFECT OF SMOOTHING OUT THE GDP (GDP %)
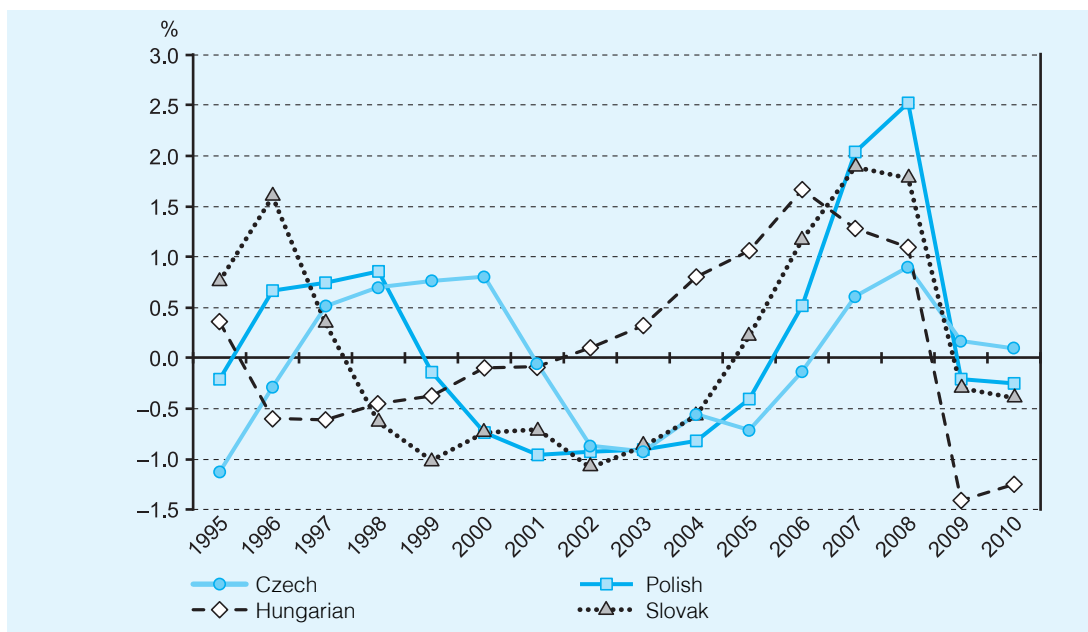
Source: Eurostat, own calculations

Figure 5 shows the changes in already adjusted expenditure levels, compared to the trend GDP figures published by Eurostat. Hungary's expenditure figures deviate from the comparable figures of other countries by at least ½–1 per cent of the GDP, but there are similar differences between the expenditure figures of other countries as well, with the exception of the 2002–2004 period.

Adjustment of expenditures in an economic and functional break-down

Aggregate expenditure levels may be broken down in two ways. On the one hand one can examine the economic (operating, current retail transfer, corporate support and capital expenditure) structure of expenditure, and on the other hand one can assess the functional (e.g. general public services, health care, education) structure of expenditure.

The adjustments described so far may only be examined fully and for the entire period in an economic break-down. This study, however, focuses on the analysis of the functional structure; the results of the analysis of the economic structure are described in detail by *Szemere – P. Kiss*, 2011.

Source of functional data from 2002 until 2008–2009: Eurostat Classification of the Functions of Government *(COFOG)* database. Functional expenditure data have been extended to include 2010 using expert estimates made on the basis of data derived from the economic structure available for the year.[4] We are able to adjust the interest expenditure and the direct and indirect tax content of expenditures, because the economic and functional break-downs of expenditure are simultaneously available in the COFOG statistics. In this break-down, however, we cannot perform the adjustment of non-tax revenues (Figure 2), as the COFOG statistics do not feature the functional break-down of either sales and fee revenues, or EU grants. These two items are

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featured in the other adjustments line of *Table 1,* and as over time it gains weight in Hungary's case, by 2010 it corresponds to the total difference.[5] Our study partially resolves this problem by examining alternative data sources. In the case of functional analysis, we not apply our alternative – smoothing out capital expenditure and GDP – adjustments either. On the one hand, we examine functional expenditures proportionate to the nominal GDP, and do not compare it to the trend GDP that is uncertain at the end of the period. On the other hand, we do not smooth out capital expenditure either, even though fluctuation at the level of various functions may be greater than what we have seen at the aggregate expenditure level.

In our study, we have placed particular emphasis on the analysis of healthcare expenditures for two reasons. Firstly, the issue of whether Hungary spends enough on health care has been one of the key economic policy issues of recent years. Secondly, analysts and health care policy-makers have pointed out from the results of our 2009 study that in 2007 Hungary spent less on the health care function than the V3 average. The OECD's 2010 health database enabled more in-depth and detailed analyses, which – in addition to public health care expenditure figures – contained data on private healthcare related expenditure, which made it possible not only to take the sales and fee revenues of the public sector into account, but also to take into consideration comparable revenues generated in the non-profit sector as well as the effects of estimated gratuity payments. The comparison is further facilitated by the fact that OECD data is available for the 1990s as well. Finally, the OECD database also contains data on various inputs (e.g. number of doctors, hospital beds, diagnostic medical instruments). With respect to state expenditures, however, the two types of statistics differ, most probably due to the different accounting of neighbouring areas (social pro-

tection, education). Since the comparison made on the basis of different methodologies reinforces the robustness of results, we have drawn the conclusions by taking the indicators of the OECD database into account.

Limits of the analysis framework

The limit of the methodology is that we exclusively examine state expenditures (input) while this carries no information as to what results (output, outcome) were achieved with these expenditures. This, beyond the amount of the expenditure, also depends on how and with what incentives it is used. For example, does the state wage system or fund allocation between provision institutions encourage better performance? We are unable to examine these aspects because results cannot be measured directly and the assessment of the efficiency and targeted nature of expenditures would reach beyond our analysis framework.

Aggregate-level results

Our study applies a methodology that makes *the level and structure of state redistribution comparable*. Of the performed adjustments, adjustment with tax and non-tax revenues is neutral from the aspect of the balance, as it impacts revenue and expenditure levels equally while the adjustment of interest expenditure impacts the budgetary balance. As an alternative adjustment, the impact of the economic and election cycle on GDP-proportionate expenditures has also been smoothed out, and through this we are able to generate a *structural expenditure time series that is suitable for the analysis of medium-term budgetary processes*. In the study, we will present the adjusted expenditure of all four countries, and will also compare Hungarian figures with the averages of the other Visegrád

Figure 6

ORIGINAL AND ADJUSTED EXPENDITURE LEVELS (GDP %)
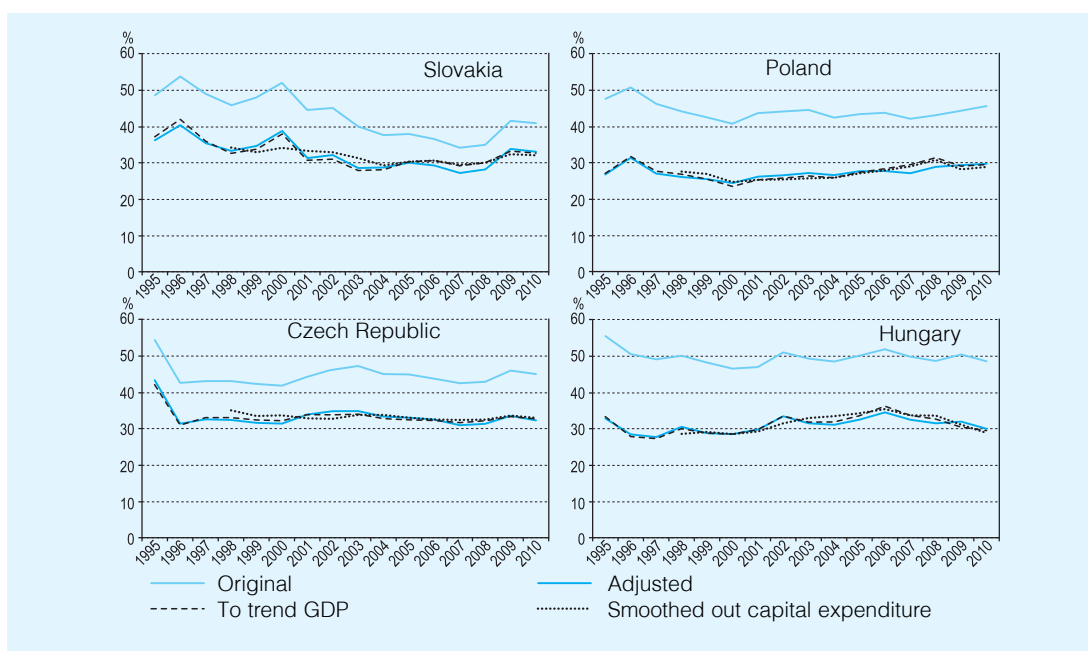
Source: Eurostat, own calculations

countries. In the text, we refer to the regional average that excludes Hungary as the V3 average.

Based on the original statistical data, by the second half of the 1990s, Poland and the Czech Republic had already permanently reduced their expenditure to under 50 per cent; Slovakia achieved this by the beginning of the 2000s, while Hungary continues to maintain its expenditure at around 50 per cent of the GDP. In contrast, adjusted expenditures in each country have been at around 30 per cent of the GDP since the mid-nineties *(see Figure 6)*.

In each of the countries, the largest adjustment of GDP-proportionate expenditures is the combined deduction of interest expenditures, tax content, fee revenues and EU grants. The rate of adjustment is different in every country, and as a result of adjustments the expenditure levels of the countries in question increasingly converge (Figures 1, 2 and 3). Level-wise, the smoothing out of the fluctua-

tion of capital expenditure (Figure 4) and of the GDP as a divider (Figure 5) entails a much more minor adjustment. After performing alternative adjustments, we get a structural indicator that illustrates the primary medium-term expenditures of the various countries.

THE ADJUSTED ECONOMIC EXPENDITURE STRUCTURE

Within the economic break-down, the groups with the largest weight were household transfers, and net operating expenditure representing a balance of wages, non-personnel costs and sales and fee revenues. The changing of the difference of the aggregate Hungarian adjusted expenditure level compared to the V3 was also due primarily to the expenditure dynamic these two groups. During the Hungarian budgetary consolidation of 1995–1996, the level of these expenditures dropped and remained stable

until 2001. In the first half of the 2000s, these expenditures increased significantly in Hungary and the adjustment of this increase was performed in recent years (for more details see: Szemere – P. Kiss, 2011).

In Hungary, wage-related public dues are high; therefore adjustment for these mainly impacts functions where their weight is greater, i.e. general public services, education and healthcare. The development of unadjusted expenditures was largely attributable to the significant decrease in wage expenditure in Hungary in recent years. That is because the (unadjusted) national wage expenditure containing employee taxes and contributions in 2006 came close to 9 per cent of the GDP, but by 2010 dropped to 7.7 per cent, partly as a result of the downsizing and partly as a result of the termination of the 13th month pension

benefit premium and the wage freeze. The decrease in Hungarian wage expenditure also had a major impact on the development of adjusted difference. The adjusted difference was the highest in 2006 (1.6 per cent), has steadily declined since then, and in 2010 was slightly below 1 percentage point.

THE ADJUSTED FUNCTIONAL EXPENDITURE STRUCTURE

The conclusions of the comparison of functional expenditures

The 2002–2010 period under review can be divided up into two distinct phases. The difference between total Hungarian and V3 expenditure levels increased in the 2002–2006 period,

Figure 7/a

THE DEVIATION OF HUNGARIAN EXPENDITURES FROM THE V3 AVERAGE BASED ON THE FUNCTIONAL BREAKDOWN OF EXPENDITURES (ORIGINAL DATA, GDP %)
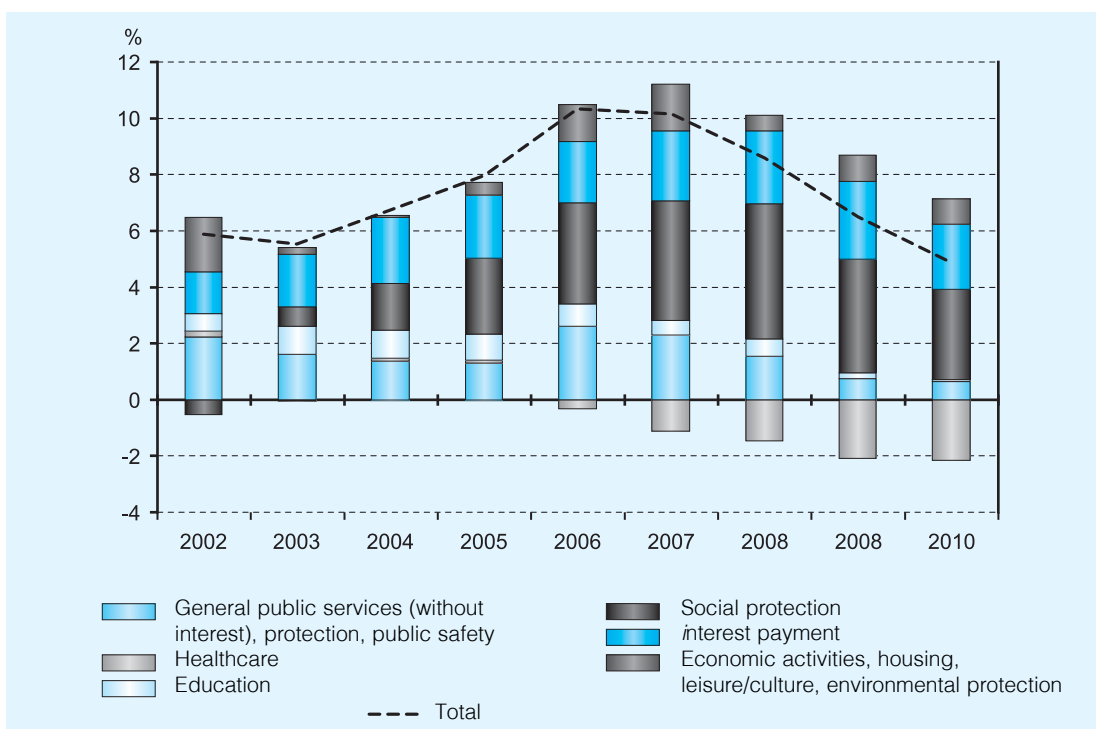
Source: Eurostat

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THE DEVIATION OF HUNGARIAN EXPENDITURES FROM THE V3 AVERAGE BASED ON THE FUNCTIONAL BREAKDOWN OF EXPENDITURES (ADJUSTED DATA, GDP %)

Other (sales revenue, EU grants and not elsewhere classified)
General public services (without interest), defence, public safety
Healthcare
Education
Social protection
Economic activities, housing, leisure/culture, environmental protection
--- Total

Source: own calculations

while between 2006–2010 an opposite process was observed. The initially increasing and subsequently decreasing difference in question was largely attributable to the different functions. *Figures 7/a and 7/b* graphically show the development of the various functions based on original and adjusted data. The study will present the functions driving the adjusted expenditures.
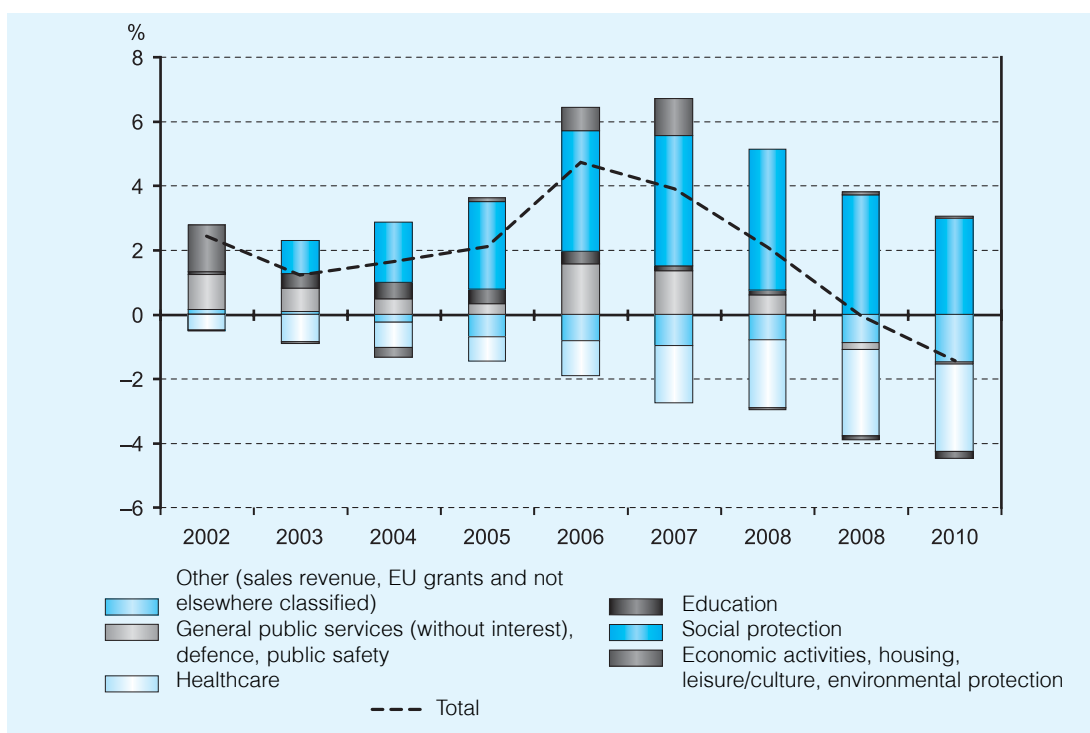
Between 2002 and 2006, the difference between total adjusted expenditures doubled, i.e. increased from 2.4 percentage points to 4.7 percentage points. At the same time, the difference between expenditures spent on the social protection function increased at an even greater rate, by close to 4 percentage points. The differences between healthcare expenditures and economic activities decreased over this period as well. It is true for both total

expenditure level and social expenditure that the growth of the difference compared to the V3 was in part due to the fact that while in Hungary growth was observed, the V3 average declined.

In the 2006–2010 period, the Hungarian expenditure level dropped by 6.2 percentage points compared to the V3 average; therefore in 2010 it fell somewhat short of the averages of other countries in the region. The moderation of the relative level of general public services and healthcare contributed most heavily to the decline, but the difference between social expenditure and economic activity also dropped by almost 1 percentage point. The reduction in the difference between these factors (and their turning negative) was brought about in part by their reduction in Hungary and the comparable rise of the V3 average.

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Table 1

FUNCTIONAL GROUPING 2002, 2006 (ACTUAL) AND 2010 (ESTIMATED)
(original and adjusted data)

2002 (% of GDP)	Original data						Adjusted data					
	CZ	HU	PL	SK	V3	HU-V3	CZ	HU	PL	SK	V3	HU-V3
General public services	4,8	9,8	6,0	7,2	6,0	3,8	2,5	3,9	2,2	2,8	2,5	1,4
Defence	1,6	1,4	1,3	2,1	1,7	−0,3	1,1	0,9	1,0	1,5	1,2	−0,3
Public order, public safety	2,1	2,3	1,5	2,7	2,1	0,2	1,1	1,3	1,0	1,7	1,3	0,0
Economic activities	8,9	7,6	3,5	6,7	6,4	1,2	8,3	6,8	3,1	5,8	5,7	1,1
Environmental protection	1,0	0,9	0,6	0,9	0,8	0,1	0,8	0,7	0,5	0,8	0,7	0,0
Housing and communal services	0,6	0,8	1,5	1,0	1,0	−0,2	0,5	0,6	1,3	0,8	0,9	−0,3
Healthcare	6,2	5,4	4,4	5,0	5,2	0,2	6,0	4,2	3,7	4,2	4,6	−0,5
Recreation, cultural and religious activities	1,3	1,9	1,1	0,9	1,1	0,8	1,0	1,5	0,9	0,7	0,9	0,6
Education	5,2	5,6	6,1	3,6	5,0	0,6	3,2	3,4	4,2	2,4	3,3	0,1
Social protection	14,6	15,4	18,3	14,9	15,9	−0,5	12,8	12,9	13,1	13,0	12,9	0,0
Other adjustments	n/a	n/a	n/a	n/a	n/a	n/a	−2,7	−2,6	−3,7	−1,6	−2,7	0,0
Total	46,3	51,2	44,2	45,1	45,2	6,0	34,8	33,6	27,3	32,2	31,4	2,2

2006 (% of GDP)	Original data						Adjusted data					
	CZ	HU	PL	SK	V3	HU-V3	CZ	HU	PL	SK	V3	HU-V3
General public services	4,4	9,7	6,0	4,8	5,1	4,6	2,3	4,1	2,5	2,6	2,5	1,6
Defence	1,2	1,4	1,2	1,7	1,4	0,0	0,8	1,0	0,9	1,3	1,0	0,0
Public order, public safety	2,2	2,2	1,8	2,1	2,0	0,2	1,1	1,3	1,2	1,4	1,2	0,0
Economic activities	7,1	6,3	4,5	3,9	5,2	1,1	6,3	5,4	4,2	3,5	4,6	0,7
Environmental protection	1,2	0,7	0,6	0,7	0,8	−0,1	1,0	0,6	0,5	0,6	0,7	−0,1
Housing and communal services	1,6	1,1	1,2	0,7	1,2	−0,1	1,5	0,9	1,0	0,6	1,1	−0,2
Healthcare	7,2	5,6	4,6	5,9	5,9	−0,3	7,0	4,4	3,8	5,8	5,5	−1,1
Recreation, cultural and religious activities	1,3	1,6	1,1	0,9	1,1	0,5	1,1	1,2	0,9	0,7	0,9	0,3
Education	4,9	5,7	6,0	3,9	4,9	0,8	3,0	3,6	4,2	2,5	3,2	0,4
Social protection	12,7	17,6	16,9	12,4	14,0	3,6	10,6	14,9	11,6	11,4	11,2	3,7
Other adjustments	n/a	n/a	n/a	n/a	n/a	n/a	−2,5	−2,7	−3,0	−1,0	−2,2	−0,5
Total	43,7	52,0	43,9	36,9	41,5	10,5	32,2	34,7	27,9	29,3	29,8	4,8

2010 (% of GDP)*	Original data						Adjusted data					
	CZ	HU	PL	SK	V3	HU-V3	CZ	HU	PL	SK	V3	HU-V3
General public services	4,6	9,1	6,1	5,2	5,3	3,7	2,5	3,6	2,8	3,0	2,8	0,8
Defence	1,1	0,9	1,5	1,5	1,3	−0,5	0,7	0,6	1,1	1,1	1,0	−0,4
Public order, public safety	2,1	2,0	2,1	2,6	2,3	−0,3	1,2	1,0	1,5	1,7	1,5	−0,5
Economic activities	7,4	6,0	4,9	4,8	5,7	0,3	6,4	5,1	4,7	4,4	5,1	−0,1
Environmental protection	0,7	0,8	0,6	0,7	0,7	0,1	0,5	0,6	0,5	0,6	0,5	0,1
Housing and communal services	1,2	1,3	1,2	0,8	1,0	0,2	1,0	1,0	1,0	0,7	0,9	0,1
Healthcare	7,8	4,8	5,4	7,8	7,0	−2,1	7,6	3,9	4,5	7,7	6,6	−2,7
Recreation, cultural and religious activities	1,5	1,4	1,4	1,1	1,3	0,1	1,2	1,0	1,2	0,9	1,1	−0,1
Education	4,8	5,1	6,0	4,3	5,1	0,1	3,1	3,2	4,4	2,8	3,4	−0,2
Social protection	14,1	17,5	16,5	12,2	14,3	3,2	11,9	14,6	11,5	11,2	11,6	3,0
Other adjustments	n/a	n/a	n/a	n/a	n/a	n/a	−3,8	−4,2	−3,3	−1,1	−2,7	−1,5
Total	45,2	48,9	45,7	41,0	44,0	4,9	32,4	30,3	30,0	33,0	31,8	−1,4

*tesrimate
Source: Own calculations based on Eurostat data

Based on adjusted data, in 2010 Hungary spending on social expenditure and public services exceeded the V3 average; however, at the same time the level of healthcare expenditures fell short of the average of other countries in the region. With respect to the fact that we have not examined the efficiency of expenditure allocation and in particular the demographic composition so emphatic in the case of the health care, educational and social protection functions, without further examination we cannot determine whether the below or above V3 average level of certain functions requires economic policy measures.

EXPENDITURES ALLOCATED FOR VARIOUS FUNCTIONS

General public services

Based on the original data, in the 2002–2010 period the greatest difference between Hungary and V3 occurs in this function. The difference between 2002–2005 remained slightly under 4 percentage points, then fluctuated between 4.6–4.8 per cent in the 2006–2009 period and only dropped below 4 per cent once again in 2010. On the other hand, the adjustment is the highest at this function, as a result of which a greater part of the difference disappears. The main underlying reason for this is the fact that the interest spending filtered out by us is included in this function. Another reason is that wage spending is dominant within the primary expenditures of this function, where the different tax rate generates significant discrepancies.

In the case of general public services, the remaining difference could, in part, be explained by the differing amounts of sales and fee revenues, but for lack of the V3 figures we cannot establish its impact accurately. In Hungary, the fee revenues of this function

exceeded 1% of the GDP in 2007; if this is higher than the V3 average, then it also explains, at least in part, the higher expenditure. However, the difference may be caused by other factors as well. For example, excessive decentralisation is not optimal in terms of economies of scale. Among transition countries, the number of municipalities, relative to the population, is the one of the highest in Hungary, i.e. the average size of municipalities is small. At the same time, as a result of the recently implemented layoffs, employment in public administration cannot be considered high by international standards. In 2007, the ratio of those working in public administration among the economically active age-group fell short of the EU average, and even among the Visegrád countries the proportion of public administration employees is lower only in Poland. The budgetary consolidation of the last few years also entailed the freezing of wages in the public sector, and the termination of the 13th month pension benefit premium, in addition to the general downsizing carried out in the public sector.

Educational function

In the case of this function, Hungarian expenditure between 2002 and 2006 exceeded the V3 average by 1 percentage point; however, this difference evaporated by 2010. During the first years of the period, the adjustment reduced the difference and in 2010 Hungarian expenditure levels were slightly below the V3 average. The function is dominated by wage expenditures, and a major part of the discrepancy observed in the case of unadjusted expenditure was generated by wage expenditures. The adjustments are also largely tied to this cost element. It should be noted that, similarly to the case with healthcare, the adjusted level of wage spending in Poland and Hungary significantly exceeds

that of the Czech Republic and Slovakia, which may be explained by the different institutional structure, i.e. the different ratio of institutions outside the general government sector. In Hungary, in 2007 sales and fee revenues increased revenues and expenditure by 0.4% of GDP. If such revenues fall short of the averages of the other countries, then on a net basis we presumably spent less on education in 2007 than the V3 average. By netting sales and fee revenues, it can be ensured that data is not distorted by the institutional structure, namely the factor that in some of the countries, institutions outside the general government sector have a greater role.

Social protection

According to the original data, in 2002, Hungary spent 0.5 per cent less on this function than the V3 average. However, mainly as a result of the introduction of the 13th month pension benefits and the Swiss Index Formula – used in Slovakia and Hungary – and the significant increase in family benefits, in 2008, Hungary spent 4.7 per cent more on this function than the V3 average. Afterwards, as a result of terminating the 13th month pension benefits, switching from Swiss-indexing to inflation-indexing, decreasing eligibility for disability pension and early retirement, and freezing family benefits, the difference by 2010 was reduced to 3.2 per cent. The difference

remains even after adjustments. Among the adjustment factors, the indirect tax content of transfers, i.e. the VAT and excise tax paid on spending the transfers and negative tax affect the expenditure level of each country. During the adjustment process, indirect tax reduces the unadjusted expenditure level, while negative tax – i.e. tax allowances granted to families – increases it in Slovakia. In Poland – the only country in the region to do so – pension expenditure is burdened by income tax and contribution payment; thus, the negative adjustment in Poland is exceptionally high among the countries of the region.

Pension expenditure is the largest item within the social protection function in each country. Accordingly, we have examined the causes of this discrepancy in detail in our analysis published in the 2009 MNB Bulletin. Based on the unadjusted data, GDP-proportionate pension expenditure was the highest in Poland; however, pensions in Poland are subject to tax payment, and thus the four countries' tax expenditure may be compared only after deducting the income tax and social insurance contribution paid on pensions.[6] After deducting the indirect tax of the primary tax content of pensions and pension spending, the per capita pension expenditure is highest in Hungary.

GDP-proportionate pension expenditure depends on three factors: the ratio of pensioners, the per capita pension and the relative development level of the country. According to the simple calculation of our previous study,

Table 2

COMPARISON OF PENSION EXPENDITURES

(2008)

GDP-proportionate expenditure	SK	PL	CZ	V3	HU	HU-V3
Original	7,1	11,6	8,5	9,1	10,9	1,8
Adjusted by direct taxes	7,1	9,6	8,5	8,4	10,9	2,5
Adjusted	5,9	7,1	7,3	6,8	9,2	2,4

Source: Eurostat és P. Kiss, G. – T. Jedrzejowicz – J. Jirsákova (2009) alapján

2006 pension expenditure in Hungary was higher than the V3 average primarily because the per capita pension expenditure exceeds the V3 average, and at the same time, under a comparable structure, the ratio of pensioners also exceeded that of the other countries, while development (i.e. per capita GDP) was similar in all four countries. Detailed comparable data are available up until 2008. By 2008, the difference increased further, which was largely attributable to the fact that in 2006 per capita GDP in Hungary was still close to the V3 average (1.5% lower); two years later, however, it was almost 8 per cent lower. For 2010, we only have detailed figures for Hungary. As a result of the economic recession, expenditures in relation to the GDP decreased only slightly despite pension expenditure-related cost cutting measures. Therefore, if the ratio of pension expenditures within social expenditures in the other countries did not change significantly, then the difference between pension expenditures did not decrease significantly either.

ECONOMIC ACTIVITIES

This function is one of the most significant expenditures in all of the countries. The function is dominated by consumption and investment-related expenditure, and thus these adjustments are primarily attributable to the difference in the indirect tax content (VAT). The role of wage spending within the differences is not significant compared to general public services, and thus the tax content thereof – to be filtered for – is also negligible. Within this function, transport expenditure constitutes about two-thirds of spending, and in the case of Hungary the transfers granted to MÁV (Hungarian State Railway Company) are also listed here. It is precisely due to the election cycle-related strong volatility of investment expenditures that we cannot draw clear conclu-

sions regarding the expenditure levels of the Visegrád countries either in the case of unadjusted, or in the case of adjusted expenditures. The average discrepancy varied significantly from year to year. Based on unadjusted data, the Hungarian expenditure level was on average 0.7 per cent above the V3 average in 2002–2008; however, in 2009–2010, there was no significance difference between them. Furthermore, adjusted data do not reflect a significantly different situation either.

Healthcare

Healthcare-related public expenditures

Healthcare is the only function where, *based on unadjusted Eurostat COFOG data*, Hungary spent significantly less in recent years than other countries in the region. While between 2002 and 2006 healthcare expenditure fluctuated at around the V3 average, from 2007 it fell increasingly below this level. Based on the 2010 estimates, the difference increased to more than 2 per cent from 1.1 per cent in 2007, which is greatly attributable to the freezing of therapeutic and preventive care expenditures for several years and the measures aimed at decreasing pharmaceutical subsidies.

The analysis of *OECD data* available for the 2000s nuances the picture shown by the COFOG data, according to which Hungary's unadjusted public healthcare expenditures lag significantly behind the regional average (excluding Hungary).[7] Based on OECD data, the V3 average is lower because due to classification that is different from COFOG nomenclature, the level of expenditures assigned to healthcare is significantly lower in the Czech Republic and Poland. As a result, in the 2002–2007 period on average the unadjusted expenditure level of the Hungarian public sector exceeded the V3 average by 0.5 per cent of the GDP, while in 2008, i.e. the last year fea-

HUNGARY'S HEALTHCARE EXPENDITURE COMPARED TO THE V3 AVERAGE

	Difference 2008	Difference 2010	Changes from 2006
Public expenditures			
Unadjusted			
Based on COFOG			↓
Based on OECD			↓
Adjusted			
Based on COFOG			↓
Based on OECD			↓
Total national economy expenditure level (OECD)			
GDP-proportionate			↓
Without pharmaceutical drugs		na.	↓

Green: Zignificant shortfall, gray: moderate shortfall, light green: no significant discrepancy

Source: Eurostsat, OECD and ow calculations

tured in our database, our deficit relative to the V3 average was only 0.3 per cent of the GDP as opposed to the 1.5 per cent measured on the basis of COFOG data. According to our estimate for 2010, which assumes the dynamics observed in functional data, based on OECD data our shortfall is close to 1 per cent.

The *adjustments increase the expenditure shortfall*, and if we were able to adjust for sales and fee revenues, the difference could increase further.[8] According to adjusted COFOG data, the Hungarian expenditure level was already lower than the average of other countries by 0.5–1.1 per cent of the GDP in the 2002–2006 period, with the difference increasing constantly. As of 2007, the gap started to widen and, as a result, by 2008 the shortfall exceeded 2 per cent of the GDP. According to 2010 estimates it is close to 3 per cent of the GDP.

The adjustments applied in our study can be performed on OECD data as well, if we assume that their economic structure required for adjustment (wage, non-personnel, investment expenditure) is similar to the structure available

in the case of Eurostat COFOG data. Based on the estimate prepared for adjusted OECD data, in 2008 the expenditure level in Hungary is 1 per cent lower than the average of other countries in the region as opposed to the 2.2 per cent discrepancy shown by the functional analysis. Based on our estimates for 2010, the discrepancy could have increased beyond 1.5 per cent.

National economy healthcare expenditures

In addition to public healthcare expenditures, the OECD database also contains private healthcare expenditures, i.e. aggregate national economy expenditure levels can also be compared. Private healthcare expenditures can be grouped into two categories. On the one hand, the out of pocket expenditure of benefit recipients constitutes a part of this, which, in turn includes the fees paid by benefit recipients (e.g. physician office visit fees and the estimated gratuity paid to healthcare practitioners), uninsured medical expenses and fees payable for medical aids, as well as fees paid to private

healthcare practitioners. The other component of private expenditure – which can be calculated on the basis of the residual principle – contains corporate healthcare services, treatments paid for through private insurance and health insurance funds, drugs and instruments as well as provision paid for by foreign countries (such as vaccinations in certain countries).

Over the last two decades, the ratio of public expenditure within healthcare expenditures decreased parallel to economic transformation in all four Visegrád countries; however, everywhere the dominance of state expenditures persisted. The role of private expenditures intensified the most in Slovakia; thereby by 2008 the ratio of state expenditures dropped to two thirds of the aggregate expenditure level. The ratio of public expenditures is 3–4 percentage points higher in Hungary and Poland, while in the Czech Republic this ratio remains above 80 per cent.

The comparison of total national economy healthcare expenditures leads to a slightly different result than the comparison of state expenditure, which is largely attributable to the fact that the ratio of public expenditure within healthcare expenditures is different in the Visegrád countries. In the first half of the last decade, Hungarian healthcare expenditures were on average still 1.6 per cent of the GDP higher than the regional average, and for the most part this difference was sustained until 2006. Therefore, in this period the Hungarian expenditure level still exceeded the V3 by more than 1 per cent. However, the difference disappeared by 2008, and according to our estimates, by 2010 the level of Hungarian expenditure fell below the V3 average. The fact that when comparing aggregate healthcare expenditures, the Hungarian expenditure level is relatively higher than if we examine only public expenditures, can be explained – along with the factor elabo-

Figure 8

THE DEVELOPMENT OF PER CAPITA GDP AND PER CAPITA HEALTHCARE PUBLIC EXPENDITURE IN HUNGARY AND OTHER COUNTRIES OF THE REGION
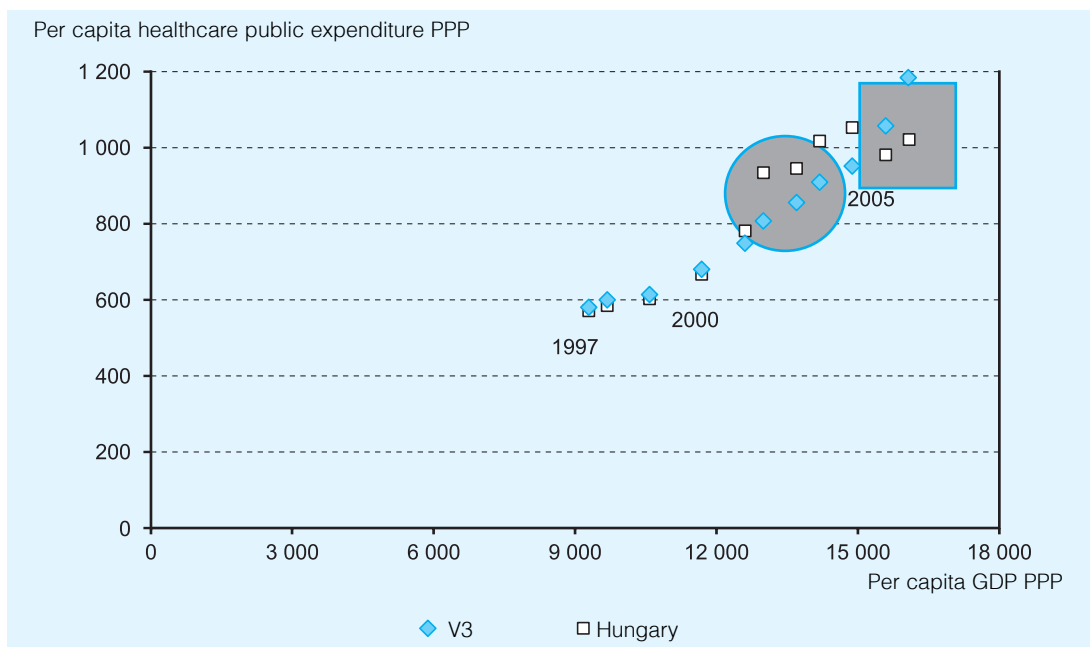
Source: OECD, Eurostat

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rated on in the previous paragraph – by the phenomenon that recently in the Czech Republic, the ratio of public expenditures within aggregate expenditures was significantly higher than the regional average; therefore, taking private expenditures into account raised the Czech expenditure level to a lesser extent than that of the other three countries.

The second dimension of comparing aggregate healthcare expenditure is the comparison of expenditure per resident at purchasing power parity. This indicator is produced as a product of per capita GDP and GDP-proportionate expenditures. Since more developed countries (countries with higher per capita GDP) proportionately spend more on the healthcare function, per capita healthcare expenditure will also be higher.

$$\text{Expenditure level at purchasing power parity} =$$
$$\text{expenditure per capita (PPP)/per capita GDP (PPP)} =$$
$$(\text{expenditure /person})/(\text{GDP/person}) =$$
$$(\text{expenditure/GDP})$$

Figure 8 supports the above correlation. With the increase of per capita GDP, the public expenditure expressed with purchasing power parity of both the V3 and Hungary increased. At the same time, in the first half of the 2000s (the period marked with the oval shape), Hungary, compared to its level of development, spent more on healthcare than the V3 average; however, during the last years of the decade (rectangle) our expenditures fell short of the regional average.

The Structure of National Economy-Level Healthcare Expenditures

Healthcare expenditures can be divided into several groups: pharmaceutical and other price subsidies, wage, non-personnel and investment expenditures. Wage expenditure can be further broken down into headcount and per capita wage. Within the headcount, the distribution of

doctors/nurses is significant, as well as the headcount 'capacity utilisation' of which the number of doctor-patient meetings could be a rough indicator. In addition to data problems, the comparison of non-personnel and investment expenditures is also hindered by the fact that this is a highly heterogeneous expenditure group. Our examination is not comprehensive and primarily illustrates the number of hospital beds and access to diagnostic instruments. The latter shows the effect of what happens when the state keeps investment expenditures at a low level for a prolonged period.

According to OECD and COFOG data, the ratio of *pharmaceutical expenditures* within total healthcare expenditures is the highest in Hungary and in 2008 constitutes nearly 32 per cent of expenditures. The average of other countries in the region is 23.5 per cent. These data on the one hand confirm the claim expressed in a number of analyses that prescription drug consumption in Hungary is too high. On the other hand, if after the removal of pharmaceutical expenditures we compared the levels of national economy healthcare expenditure, then we would already be under the V3 average in 2008.

The *number of doctors per 1 000 residents* in Hungary was around 3 in recent years, which does not significantly differ from the V3 average. The situation is similar with respect to the *number of nurses per 1 000 residents*, which in Hungary's case was around 6. One of the indicators of healthcare performance is the *number of doctor consultations per resident*. If we examine this indicator along with the number of doctors per 1 000 people, we can gain information on the efficiency of the provision system as well as on the intensity of system utilisation. We must, however, be cautious when using this indicator as, besides efficiency, the high number of consultations per doctor may indicate that the length of consultations is insufficient, i.e. the examination is not sufficiently thor-

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ough and may also indicate that doctors are overloaded. In Hungary, the number of patient-doctor consultations is close to the Czech and Slovak average, and at the same time significantly exceeds the Polish indicator. This is consistent with the fact that the number of doctors per 1 000 people in Poland is significantly lower than in the other three Visegrád countries.

Based on the available wage statistics, we can determine the *average wages in 2009 of people working in human healthcare and social provision*, but the two can only be distinguished in the case of Hungarian data. The Hungarian wage level is seemingly 20 per cent lower than the V3 average, but this comparison is misleading for a number of reasons. A distortion may be caused for example by the fact that wage statistics do not include gratuities and the related estimate of the OECD cannot be separated within the payments made by care recipients. Furthermore, the distribution of doctors and nurses also impacts the per capita wage as the wage level of the two are different. In our case,

the ratio of doctors within all healthcare employees is about one third, as opposed to 31 per cent of the regional average. This therefore would increase the difference.

Another indicator used to measure healthcare input is the *number of hospital beds per 1 000 people*. This indicator in itself can also only be used to a limited extent, as it does not provide a picture regarding the utilisation of hospital beds or the quality of infrastructure used during treatment. Between 1997–2006 in Hungary, with a slight spread the number of hospital beds per 1 000 residents was at around 8; subsequently, this indicator dropped to 7 which is very close to the V3 average. A somewhat more precise picture is provided on the actual input of therapy by the *number of active hospital beds* which in Hungary was 5.5 between 1997–2006 and in 2006 was still the highest in the region; however, by 2008 it dropped to 4.1 which in turn was the lowest. This is consistent with the efforts of recent years to increase the number of cheaper to maintain passive beds as, according to govern-

Table 4

VARIOUS HUNGARIAN HEALTHCARE INDICATORS COMPARED TO THOSE OF OTHER VISEGRÁD COUNTRIES

	Visegrádi countries	
	Difference 2008	**Changes from 2006**
Per thousand people		
number of physicians		→
number of nurses		→
number of hospital beds		↓
number of active hospital beds		↓
Per million people		
number of CTs		↓
number of MRIs		↓
number of mammograms		↑
number of radiological devices		↑
Number of patient-doctor consultations per resident		→

Green: Zignificant shortfall, gray: moderate shortfall, light green: black:bo significant discrepancy, higher valueh
Source: OECD

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ment communication, in many cases active beds were underutilised.[9] The fact that the number of active beds decreased at a greater rate than the number total hospital beds goes to show that the number of passive beds increased. The decrease of total hospital beds, and of active beds in particular, could partially explain the decrease in the healthcare expenditure level also reflected by OECD and COFOG data.

The last indicator group examined is the *number of advanced diagnostic and treatment instruments per 1 000 residents*. This provides a more accurate picture of the level of development of the infrastructure than the number of hospital beds. The analysis would be even more precise if the number of examinations performed by the machines, i.e. the utilisation of modern tools was under review; however, the OECD database has no detailed figures in this regard. The analysis will compare the number of 3 diagnostic tools and 1 treatment tool per 1 000 residents to the V3 average. The number of these tools is significantly lower than that of our regional peers. The number of radiological devices per 1 000 residents is less than half of the V3 average. The specific number of CT and MRI devices is 55 and 60 per cent, respectively, of the regional average (not counting Hungary). In the case of mammography devices, however, in 2008 the Hungarian indicator exceeded the V3 average. We have also examined the relative development of the numbers of these tools chronologically. The number of tools in the 2003–2008 period increased in Hungary in the case of all device types; however, the comparison to regional country dynamics provides a mixed picture. In the case of mammography devices, Hungary's relative position has improved significantly, while in recent years progress in the case of radiological devices has been less pronounced. In contrast, in relation to the number of CT and MRI devices the Hungarian growth dynamic has

lagged significantly behind the V3 average in recent years. Accordingly, our deficit in this area has actually increased.

Contradicting slightly the conclusions drawn from the OECD data, the analysis of *Dr. András Palkó* (2008) on the situation of Hungarian imaging diagnostics states that the number of radiological devices and access to CT and MRI machines are all in order with respect to the number of machines. According to him, it is primarily the average age and technical quality of these instruments that fall short of the European average. The authors consider it a problem that "in Hungary the distribution of devices does not completely match the population's needs; there are exceptionally well equipped areas as well as poorly equipped areas".

The analysis of OECD data therefore supports and somewhat nuances the image that the level of Hungarian healthcare expenditure falls short of the average of other countries in the region. The summary of the various elements of the difference is presented in *Table 4*. The goal of our analysis in the case of healthcare, however, similarly to the case with the other functions, is not to determine the quality of provision or the services provided. Even though comparable data measuring certain elements such as expected life span, the occurrence of certain diseases, and infant mortality are available in the OECD database, in addition to quality healthcare services, these indicators are also greatly impacted by lifestyle.

Other functional expenditures

The expenditures analysed so far have in recent years exceeded 85 per cent of total expenditure. The remaining expenditures are individually of less weight as well; therefore, it is no surprise that in the absolute sense Hungary's expenditures on these functions do not differ significantly from the V3 average.

CONCLUSIONS

When evaluating the size and structure of Hungarian redistribution, other countries of the region, Visegrád countries in particular, are frequently considered benchmarks, and the objective of our study as well is to make this comparison for the 1995–2010 period. The examination of official data can be primarily applied to assess the ESA deficit indicator; however, but in many ways it is not suitable for the analysis of structural processes. The comparison of expenditure levels and structures can only provide an authentic picture if the factors exogenous in the short-term with respect to total expenditures have been removed from the data. Therefore, it would be expedient to filter out interest expenditure mainly determined by the balance of previous years. Also to be removed – a similar factor, which, in contrast to interest expenditure, does not impact the balance – is the tax content of expenditures determined by the tax system as well as the part of EU grants that flow through the budget, which increase incomes and expenditures in equal measures. In our study, we have presented the methodology of these adjustments, and have compared the expenditure time series and structures of the four Visegrád countries after making these adjustments.

The study's analysis framework has, however, reached beyond performing the adjustments essential to making the comparison and as an alternative indicator generated a structural indicator that is suitable for the analysis of medium-term expenditure side processes as well. This was necessary in order to remove the effects of the changes in the economic cycle and the – primarily election cycle-related – fluctuation of capital expenditures from GDP-proportionate expenditures. For this reason, we have also expressed the expenditure level proportionate to trend GDP and have evenly spread capital expenditures in each country within the four-year election cycles. The disadvantage of said alternative indicator is that the rates of both cyclical effect and average capital expenditure within an election cycle will be uncertain at the end of the period. It is precisely for this reason that we performed alternative adjustments only at the aggregate level, and did not apply them at the examination of the functional expenditure structure.

The main conclusion of the functional decomposition of expenditures is that the difference between adjusted expenditures doubled in the 2002–2006 period mainly because in Hungary during this period social expenditures increased by 2 per cent, while in other countries of the region there was a similar rate decrease. After 2006, however, a significant decrease of expenditures was executed in Hungary in the case of public services, healthcare and economic activities, as a result of which the Hungarian adjusted expenditure level in 2010 fell short of the V3 average. In the case of all three functions, besides the decrease in the Hungarian expenditure level, the fact that these expenditures increased in other regional countries also contributed to the process. In 2010, social expenditures in Hungary significantly exceeded the V3 average, while general public services exceeded this average only slightly. In contrast, based on Eurostat data, Hungarian healthcare expenditures significantly fall below the V3 average, while OECD's different content data shows the same lag to be only slight. This difference, however, does not necessarily mean that we spend too little on healthcare, because the justified expenditure level is influenced by the efficiency of the healthcare system as well as the state of health and the age composition of the population.

In the study, we have compared the expenditure level and structure of the four Visegrád countries using adjustments. At the same time, there are several reasons why the comparison of these adjusted time series cannot provide a

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specific point of reference for economic policy as to in which areas the decrease or increase of expenditures would be justified or necessary. In addition to their common features, there are a number of differences between the four countries (Ódor – P. Kiss, 2011). The most striking of these is the difference of public debt and, consequently, of interest expenditure. As this particular level is highest in Hungary, in order to achieve the medium-term balance target the surplus of interest expenditure must be offset by a lower level of primary expenditures or a higher level of income. Also pointing in the direction of decreasing primary expenditure is the fact that our level of development falls short of the V3 average. Finally the 'optimal' level and structure of redistribution also depends on the welfare increasing effect of expenditures; however, this is impacted by the efficiency and targeted nature of allocation. In theory, high or low redistribution level models could be equally successful. All in all, for the sake of clarity it is essential to perform the adjustments presented in this study. However, these adjusted time series still serve only as starting points for these decisions.

NOTES

[1] The authors have previously prepared a study for the MNB titled "Almát körtével – újratöltve Négy visegrádi ország állami újraelosztásának összehasonlítása 1995—2010 (Apples and Oranges – Reloaded, A Comparison of the Public Redistribution of the V4 1995—2010).

[2] This is the recommendation of the International Public Sector Accounting Standards (IPSAS) Board and has been published as a minority opinion during the review of the National Accounts System (Task Force on Harmonisation of Public Sector Accounting, 2005).

[3] In Hungary, in MÁV's (Hungarian State Railway Company) case a statistical reclassification was carried out where as of the second half of 2007, MÁV Start (which operates passenger transport) was added to the government sector in a statistical sense, and accordingly its expenditures and revenues were stated in the accounts on a gross basis. This means that if we fail to reduce expenditures by the sales and fee revenues, then the time series will be comparable with that of other countries where railways are not part of the government sector.

[4] The increment of retail transfers under economic classification (as a ratio of the GDP) was added to the GDP-proportionate expenditure generated on the social security function in the previous year, because these two categories overlap significantly. Due to the similar overlap, we have added the increment of subsidies and capital transfers to the previous year value of the economic activities function. We have divided the general public services function up into interest and non-interest parts, changed the interest part by shifting the interest expenditure featured in the economic classification, and added the non-interest part of general public services to the sum of other remaining functions (healthcare, education, etc.). The functional circle thus generated is in essence covered by wage and non-personnel expenditures according to economic classification. Accordingly, we have proportionately divided the increment of wage and non-personnel expenditures between the functions concerned, assuming (for simplicity's sake) that a proportionate shift occurred. In Hungary's case, we have verified the above assumptions according to the functional classification of the 2009 budgetary final accounts.

[5] One of the reasons of the increment is the sharp increase of fee revenues resulting from the 2007 statistical reclassification of MÁV's passenger transport branch, while another is the gradual increase of EU funds.

[6] In our analysis, in addition to old-age pensions, disability and dependent pensions are also featured among pension expenditures. This way we are able to examine the number of pensioners in an analogue manner.

[7] The OECD database also contains data for the previous decade. In the first half of the 1990s, Hungarian public healthcare expenditure level exceeded the Visegrád average by 1.5 per cent of the GDP; then, in the latter half of the same decade, primarily due to the adjustments of the Bokros-package (which decreased the real value of expenditures with inflation), this difference for the most part disappeared.

[8] The reason for this is that while in Poland and Hungary about 1.5% of the GDP represents the wage expenditure of healthcare employees, which falls off to 0.9% and 0.6% of GDP, respectively, after the primary and indirect taxes are deducted, in the Czech Republic and Slovakia the ratio of wage spending is a mere 0.2% of GDP (in the Czech Republic, 85% of healthcare was privatised by 1993, and in Slovakia similar privatisation took place in 2004). The low wage spending can be explained by the fact that the ratio of healthcare institutions classified outside the government sector (e.g. non-profit) is significant, which appear among public expenditures in the form of net subsidies reduced by sales and fee revenues. In the absence of data we were unfortunately unable to perform the adjustment of sales and fee revenues, even though in Hungary's case these account for 0.6% of GDP, which in all likelihood exceeds the V3 average.

[9] In our analysis, we refer to certain health-policy efforts but have only indicated the direction of change. In this respect, we are unable to determine the impact these had on the quality of service provision.

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