

# Mihály Hoffmann and Gábor P. Kiss: From those lying facts to the underlying deficit\*

*Developments in the headline budget balance are distorted by temporary factors. The most significant of these factors are the business cycle and creative accounting. Adequate information and estimates are available, allowing us to filter out these factors using a so-called adjustment for self-reversal. Expenditures and revenues adjusted in this way, however, continue to fluctuate, as fiscal policy measures can, in part, also turn out to be temporary in retrospect. We filter out this effect by using a four-year moving average (covering a full election cycle), instead of taking individual pieces of information into account. Moving averages are calculated in a forward-looking manner, for the three subsequent years in addition to the current year. This allows temporary effects in the past to be captured and renders their identification easier over the forecast horizon. Based on our results, the deficit indicators obtained using the adjustment for self-reversal and the adjustment for policy reversal are similar; the latter method, however, yields a higher deficit for the period 2010–2012, due to the tax cuts (phasing out of temporary taxes) announced for 2013. Overall, however, both adjusted indicators deviate substantially from the headline indicator, highlighting the significance of the adjustment.*

## INTRODUCTION

Developments in fiscal policy are a priority area in economic policy. The government exerts a substantial influence on all economic agents through the taxation and redistribution of income. Assessment of budgetary developments can be carried out based on various criteria and across various horizons, and the wide variety of indicators measuring the budgetary position reflects this diversity.

In this article, we seek to determine which indicator may be most suitable for filtering out temporary effects from the budget balance. The effect of fluctuations in the economic cycle can result in the headline figures deviating from medium-term developments, and this effect can also be exacerbated by creative accounting. Statistical settlement corrects many forms of creative accounting, as reflected by the substantial retroactive revisions from the mid-2000s, where actual figures turned out to be much higher than preliminary result. For analytical purposes, the MNB also performs adjustments on a continuous basis, in order to

filter out budgetary items without any significant economic effect.<sup>1</sup>

The indicators of structural or underlying deficit used in international practice attempt to eliminate temporary effects in various ways. Differences in methodology are partially due to their specific objectives and different interpretations of the medium term. The aim of the European Union's measure of the structural deficit is to assess the distance from the medium-term budgetary objective (MTO). Other institutions (such as the MNB and the International Monetary Fund) also examine the medium-term orientation of fiscal policy as to whether it contributes to the savings and investments of the economy and to the sustainability of the external balance.

The cyclical fluctuation of tax revenues around the medium-term trend causes an automatic deviation between current and medium-term deficits.<sup>2</sup> The budgetary effect of the business cycle was examined in one of our previous articles (P. Kiss and Reppa, 2010). In neutral cases, expenditures increase at the rate of potential GDP growth; in such cases,

\* The views expressed in this article are those of the author(s) and do not necessarily reflect the official view of the Magyar Nemzeti Bank.

<sup>1</sup> For example, losses made by state-owned transportation companies should be reflected immediately rather than at a later date of debt assumption.

<sup>2</sup> Traditional cyclical adjustment can be complemented by filtering out the effect of asset price fluctuations on tax revenue and of changes in financing requirement and yields due to cycles in interest spending. This is not performed in most cases due to technical difficulties, except in the United Kingdom (Farrington et al., 2008).

the automatic stabilising role of the government budget comes into play. Moreover, for purposes of stabilisation, so-called counter-cyclical measures may also be applied, which increase expenditures in the case of economic decline or further decrease revenues through tax cuts. When market financing conditions and/or international obligations do not leave room for any further increase in the deficit, spending cuts and tax increases may become necessary in order to offset the revenue lost due to the cycle, in other words a so-called pro-cyclical budgetary policy – one which reinforces the effect of the business cycle – may be implemented.

Other aspects, for example those of a political nature, may also be the reason behind such measures, along with the business cycle. In addition to counter-cyclical measures, fiscal policy can also help achieve other social policy objectives. To that end, governments may deviate short-term budgetary developments from the underlying ones. The medium-term level of the deficit is difficult to determine, since these measures can be either permanent or temporary. The rest of this article examines how the two types of fiscal measures can be distinguished. We must first define what is considered a temporary measure. As revealed later in this article, there are several levels of defining the underlying deficit, i.e. net of temporary effects, depending on this definition. After discussing these levels in detail, results will be presented and conclusions drawn.

## DEFINITIONS AND THE VARIOUS LEVELS OF ANALYSIS

### What qualifies as permanent or temporary measures?

Our objective is to distinguish between permanent and temporary budgetary developments, in order to assess the underlying level of the deficit for each year under review. This method does not substitute determining the deficit path that can be forecast from the current point in time based on the detailed forecast of revenues and expenditures.<sup>3</sup>

A fundamental issue when defining and interpreting the underlying deficit for a given year is to define what we mean by a situation of no policy changes. In line with the

principles of automatic stabilisers and cyclical adjustment, in neutral cases, actual spending figures for a given year must be projected with a growth rate identical to that of potential GDP, while revenues fluctuate in line with the cycle around the rate of potential growth. However, actual expenditure or revenue for a given year is not necessarily considered a proper basis, as it may be exposed to temporary effects (measures), rendering it unsuitable for medium-term extension. Examples are the above-average investment spending in election years or the below-average figure that follows thereafter. Accordingly, two types of indicators can be defined.

The first method therefore considers actual revenue and expenditure levels as permanent, in which case the emphasis is placed on determining actual levels, as expenditures and revenues recorded officially can deviate from transactions having an actual economic impact due to creative accounting. In order to improve the current deficit – using various financing solutions – revenues can be brought forward (transformed into capital revenue) with no real effect, or expenditures with an actual economic impact can be postponed to later periods. On one hand, debt thereby accumulated can be recorded in the form of capital expenditure, postponing payment of actual current expenditures for years, with the government thus providing delayed financing for quasi-fiscal expenditures, for example (MÁV, BKV, etc.). On the other hand, by receiving financing, traditional capital spending can be converted into instalment payments over a longer period. Thus, for example, in case of government investment projects outsourced in the form of public-private partnerships, instead of the actual expenditure, only the protracted instalment payments are recorded. The MNB regularly performs these analytical adjustments, and also publishes the resulting augmented (SNA) deficit. As the impact of the economic cycle is also excluded in order to filter out temporary effects, the cyclical adjusted augmented (SNA) balance became similar to the so-called cyclical adjusted and standardized budget measure used by the US Congressional Budget Office (CBO).<sup>4</sup>

This indicator, cyclically adjusted and focusing on the (economically) effective expenditures and revenues, should be complemented by some temporary factors whose transitory nature can be clearly established. These include the unexpected budgetary consequences of natural

<sup>3</sup> A 10-year projection was prepared for examining the dynamics of debt in the MNB's Analysis of the Convergence Process 2010. At such a horizon, the data obtained from past time series are of no use; instead, the level of spending which we should approach must be established. The average spending of Visegrád countries could serve as one possible basis of comparison for current expenditures; in case of investments, the annual depreciation and the additional expenditures that can be funded from EU sources seemed like realistic assumption.

<sup>4</sup> 'The CBO routinely publishes another adjusted budget measure, the standardized-budget surplus or deficit. That measure excludes the effects not only of cyclical fluctuations but also of certain more-or-less-temporary factors that are likely to prove economically insignificant.' (CBO, 2002).

disasters or court decisions, or the administrative costs of elections. We used this form of adjustment for our so-called 'adjustment for self-reversal'.

Our other – so-called 'adjustment for policy reversal' – method seeks to distinguish temporary and permanent effects for a much broader range of expenditures and revenues.<sup>5</sup> There is, however, a substantial 'grey area' between them.

- On the one hand, certain revenues and expenditures, although stable, may fluctuate on an annual level. One of the reasons for this is that tax changes and wage increases intended to be permanent may occur during a given year, and therefore, the full-year effects only appear in the next year. These may soon be followed by additional steps of a similarly 'permanent' nature, or those intended as such, taken in the opposite direction.<sup>6</sup>
- On the other hand, certain volatile revenue and spending items can be identified, the changes of which might be attributable to government decisions or exogenous factors (e.g. completion time for investments, changes in yields, etc.).

Based on the above it is clear that distinguishing between permanent and temporary effects is not easy. Officially identified one-off factors are usually characterised by the fact that they are arbitrarily chosen specific items.<sup>7</sup> For example, Member states can present debt assumptions to the European Commission which are the result of continuous under-financing of quasi-fiscal expenditures. In communicating with Hungarian voters, tax cuts can be presented as permanent, while tax hikes are described as temporary. Obviously, for past periods it can be established *ex post* whether measures presented as permanent or temporary really turned out to be one or the other, but this distinction cannot be made yet for the period most relevant from an economic policy perspective (i.e. the current and the following 1-2 years). The various methods for smoothing out time series (Blanchard, 1990, Joumard et al., 2008), which distinguish temporary and permanent items for the period under review and can make this distinction easier for

the near future, even though a degree of uncertainty nevertheless remains.

The distinction can be made more easily if the largest aggregate, the balance adjusted for self-reversing effects, is used as the basis. This is necessary because the more disaggregated the level under examination is, the more one-off effects can be identified. These can cancel out each other on the level of the balance, as the temporary increase in current expenditures (50 percent wage increase) for example can be funded by decreasing capital expenditure. Investment priorities can also change within capital expenditures, compared to which specific investment projects (road construction, purchase of military equipment, etc.) can seem temporary. Similarly, the balance is affected by the sum of all taxes, while individual taxes can be considered as temporary. In order to illustrate the effects of certain factors within the aggregate approach, the following sections of this article will also present the size of the impact based on the moving average methods in case of taxes, wage expenditures, social transfers, net interest expenditures and net capital spending.

## FILTERING OUT TEMPORARY EFFECTS

In the following section – after clarifying general principles – we will review the possible steps of various adjustments. In the following part of this study, we will first carry out so-called adjustments for self-reversal, which filter out temporary items based on information available for the past and the present, and which have already been used in MNB analyses. We then present adjustments with policy reversal, the aim of which is to also integrate information regarding the future into the time series. In practice, this means that the developments of the upcoming years are also reflected in the adjusted deficit figure of the year under review.

### Overview of adjustments for self-reversal

Adjustments for self-reversing effects refer to the correction of cyclical adjustment, creative accounting (e.g. quasi-fiscal

<sup>5</sup> In order to filter out temporary effects, this approach takes into account changes (discretionary reversing) of the fiscal policy stance in the following years.

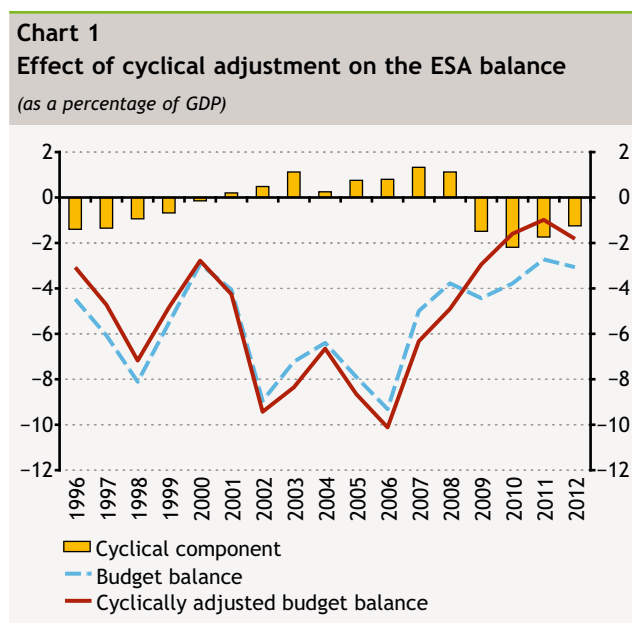
<sup>6</sup> For example, following the 50 percent raise in civil servants' wages in 2002, subsequent years saw little or no such action in the public sector. Such a wage increase could not even have qualified as permanent (sustainable).

<sup>7</sup> While international organisations generally provide guidance regarding the criteria for one-off items, member states have leeway in the classification of one-off items. In its Convergence Report, for example, Hungary recorded the one-off expenditures related to the labour force reduction in the public sector (2008), the VAT rebate implemented based on the decision of the European Court of Justice (2009) or the transfers related to taxpayers' return to the state pension system (2009-10). The list of one-off items has previously included the purchase of Gripen fighter planes, the additional costs of flood protection measures, the capital transfers to MÁV or the cancellation of Iraq's debt.

activities and other capital revenue) and of temporary factors in the narrow sense.

### 1. Cyclical adjustment

The most important and perhaps most well-known correction is adjustment for the economic cycle (P. Kiss and Reppa, 2010). When calculating the cyclically adjusted budget balance, we assume that – similarly to the fluctuation of GDP around the level of potential GDP – the average of the cyclically adjusted budget balance is equal to the average of unadjusted indicators over one business cycle. In other words, higher deficits during recessions are offset by lower deficits during booms.



### 2. Excluding the effects of creative accounting

In our article, creative accounting refers to operations which affect budget revenues or expenditures in the short run without exerting an economic impact. As these represent a burden on the government budget over a longer horizon, the balance of adjustments is principally equal to zero, i.e. the averages of indicators adjusted with these items and of unadjusted indicators are equal.<sup>8</sup> The reason for this is that temporary improvements are enabled by some form of financing operation. In addition to the impacts of the business cycle, budgetary items equalling

zero or in other words considered to be 'self-reversing' fundamentally include the following:<sup>9</sup>

- losses incurred by state enterprises (quasi-fiscal) do not appear real-time in the deficit, as they are only recorded at the time of one-off debt assumption (capital expenditure) by the government;
- quasi-fiscal public-private partnership investments are financed by credit, and are recorded as expenditures at the time of instalment payments;
- current revenue appearing as capital revenue may also imply borrowing. Concession fees, for instance, appear in advance as a lump-sum revenue in the budget.

#### a) Quasi-fiscal activities and investment (public-private partnership)

Current headline figures (cash-flow and accrual indicators) are unable to follow the developments in which organisations statistically not forming part of the government sector perform government tasks – under government control – which sooner or later will also appear in the headline indicators. As a result, headline indicators do not reflect the actual budgetary position and its effect on other economic agents. This can generate problems in assessing both the level and dynamics of the deficit.

In these cases, budgetary indicators accurately reflecting true budgetary and economic developments can be obtained if the headline indicators are adjusted by one-off impacts affecting the budget spread out over the period of the accumulation of the quasi-fiscal debt. This is based on the following considerations, illustrated by a specific example.

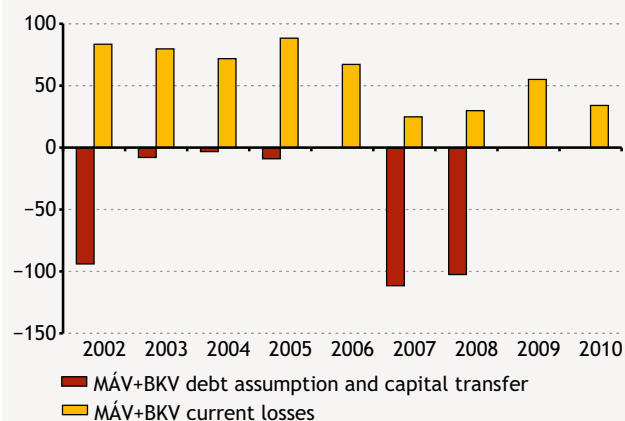
Let us assume that in a given year, the debt of the state railways company (MÁV), which is not recorded in headline budget statistics, is assumed on a one-off basis. The amount increases the headline deficit figure in the year of debt assumption, while the accumulated debt is clearly the result of several years of loss-making operations by the railways. This also means that according to our methodology, in the year of debt assumption, the amount thereof is deducted from expenditures, while in the period of debt creation, we increase expenditures by spreading out this amount.

<sup>8</sup> However, we must mention that in our time series, adjustments do not equal zero, as the government for example does not assume the full quasi-fiscal debt, but only some part thereof. Based on past experience, e.g. in the case of public transportation enterprises, when the government played a role (debt assumption, capital transfer), approximately half of the accumulated debt was assumed. Moreover, in the case of public private partnerships, one-off investment costs are distributed over a longer period, but as this can be up to 20 years, it may still have a net positive effect on the balance over the medium term.

<sup>9</sup> For detail, see P. Kiss, 2007.

**Chart 2**  
Adjustment of the balance by the main public transportation enterprises (MÁV, BKV) in our structural indicator

(HUF billion)



Debt assumptions from public enterprises are closely correlated to the political cycle. Past observations show that public transportation enterprises (e.g. MÁV, BKV, GYSEV) not classified within headline budget statistics, enterprises carrying out transportation infrastructure investments (e.g. NA, ÁAK), and other state-owned and state-controlled, but formally non-government enterprises (e.g. MFB) generally accumulated debt gradually between elections, which the government then consolidated in part or in full after the following elections.

Public-private partnership projects present a similar case, although with an opposite sign. Investments exert their actual economic effect in the year of construction, while the availability fee, paid continuously, possibly over several decades, is only reflected as spread over time in government statistics. In other words, while in case of debt assumption, a more substantial expenditure is taken out from the year at issue and distributed over several (generally previous) years, in case of public-private partnership projects, the relatively large amount of the investment is added to the actual investment period, while the statistics for the following years are reduced by the availability fees related<sup>10</sup> to the investment.

The value of public-private partnership projects implemented in Hungary between 2004 and 2010 amounted to a substantial 6-7 percent of GDP. Three-quarters of these

investments were related to motorway construction (M5–M6), with developments in higher education (student hostel construction, renovations) and prison construction also representing a large share.

### b) Capital revenue, the effect of private pension fund transfers

Certain capital revenues can improve the headline balance without having any economic effect. Past examples of this include the lump-sum revenues related to concessions and cushion gas, which we quantified as current revenues in our augmented (SNA) indicators. At the end of 2009, the government granted the opportunity for those over the age of 52 to transfer from the private pension fund system to the state system. Afterwards, from the end of 2010, the transfer has become an option for everyone. Besides the fact that the future contributions of pension fund members transferring to the state system are recorded as budgetary revenue, accumulated funds are added to the budget balance in one lump sum at the time of transfer based on current statistical methodology. The budgetary effect of transfers at the end of 2009 was not sizeable, but based on the current regulation a substantial amount of funds will be transferred, this clearly requires an adjustment of the headline figures. In the event of such a transfer – as based on current information, those returning to the state system will receive full state pension payments – we can consider that from economic point of view those returning to the state system were never private pension fund members and have always paid contributions to the state pension fund system. The lump-sum payment should therefore be distributed over the past, improving the balance of past years, while the current deficit indicator would deteriorate, with the one-off impact filtered out. Taking into account the accumulated wealth of private pension funds amounting to HUF 2,800 billion, this would mean that the deficit indicators of the past 12 years used for purposes of analysis would improve substantially in each year – in line with the actual increase in wealth – depending on the proportion of funds transferred to the state system.<sup>11</sup>

Overall, the cyclically adjusted augmented (SNA) structural balance already used in MNB analyses is obtained following adjustment for cyclical factors and the examined quasi-fiscal activities and capital revenues. In the following step, we adjust this with the effect of temporary factors taken in the narrow sense – hitherto negligible – and thus obtain the

<sup>10</sup> In case of PPP projects, we must make a distinction between the costs of the actual investment and potential operating and maintenance costs, for which no adjustment of data is necessary, as these represent costs incurred irrespective of the implementation method of the investment.

<sup>11</sup> The Government also decided, in parallel to its decision on the return to the state system, that the tax authority would not transfer private pension fund contributions to the pension funds for 14 months, recording them instead as government revenues. This is examined in the following part of this article.

underlying deficit indicator adjusted for self-reversing effects.

### 3. Excluding temporary effects in the narrow sense

Items which are related to one-off events regularly appear in the budget, either on the revenue or expenditure side. These may include events independent of the government, such as expenditures related to natural catastrophes or revenues and expenditures caused by court decisions, as well as regularly recurring items such as the administrative cost of organising elections. In this article, we consider such items as clearly temporary, therefore we adjust the cyclically adjusted deficit (instead of deducting them as one-off items) by their deviation from a retrospective four-year moving average.<sup>12</sup>

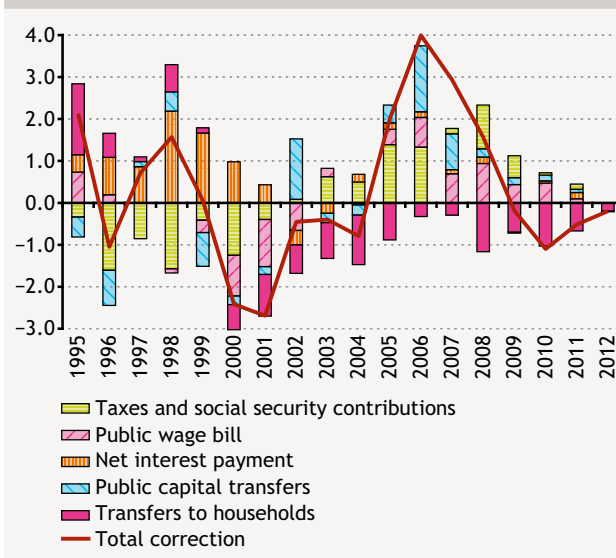
## Overview of adjustments with policy reversal

In this chapter, we present adjustments with policy reversal at the aggregate level as mentioned earlier. This aggregate approach is also required because public expenditures (investments, wages, etc.) have tax contents, and therefore their changes automatically change tax revenues. As a first step, we fixed the period of the moving average used to smooth out the time series at four years, as this corresponds to the election cycle. After this, we opted for the moving average calculation method which also takes into account the subsequent years, besides the current one (Blanchard, 1990). This method makes it possible to gradually 'bring forward' the prospective measures in the forecast horizon. Its disadvantage is that if the time series (the deficit) has a trend over the entire period, the sum of adjustments do not amount to zero. We made the years used in calculating the average comparable by calculating the average as a proportion of GDP, rather than using nominal values.<sup>13</sup> The extension of the forecast horizon also presents a challenge. In this case, we assumed that measures will also be implemented in 2013 in relation to taxes (further corporate tax cuts); other expenditures, however, remain unchanged as a percentage of trend GDP.

Besides aggregate-level moving average calculation, we also smoothed out the main items for purposes of analysis, so that their contribution to the aggregate-level adjustment can be established. The chart clearly reflects, for example, that in the case of expenditures expressed as a proportion

**Chart 3**  
Aggregate level adjustment and the main factors thereof

(as a percentage of trend GDP)



of GDP, the savings achieved via the surprise inflation in 1995 soon proved to be temporary. It is also apparent that the adjustment of interest spending was of significant weight until 2000. For purposes of filtering out temporary effects, capital expenditures typically contributed around election years, but only until 2007, while social transfers and wages contributed continuously, to a larger extent until 2010. Adjustments by tax revenues influence our time series substantially over the entire period, and looking ahead to 2011–2012, it can be seen that revenue-side adjustments are the most important factors, primarily due to sectoral special taxes. In the following section, we present the extent to which and reasons why the main factors contributed to filtering out temporary effects on an aggregate level.

### 1. Adjustment of taxes and contributions

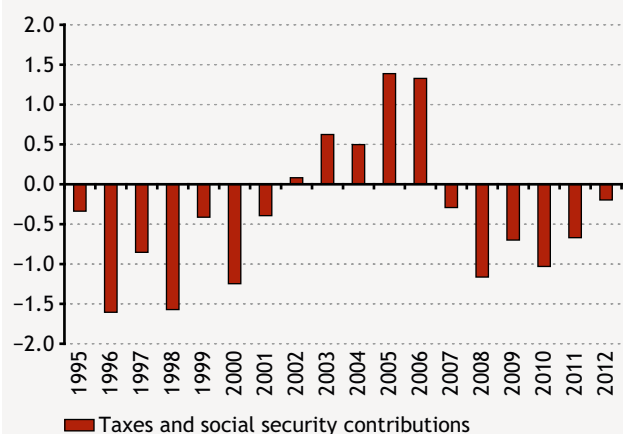
In the case of tax revenues, we have already filtered out the effect of the cycle using cyclical adjustment, but the time series remained volatile. For example, the time series continued to include the fluctuation in taxes paid on public expenditures (such as those on the 50 percent public wage increase), similarly to the impact of tax measures, and changes in tax evasion, which may theoretically be linked to either measures or the economic cycle, as well as the impact of fluctuations in inflation.<sup>14</sup> The time series smoothed out

<sup>12</sup> Although these temporary effects are not classical self-reversing ones, they became self-reversing by construction (by comparing them to a moving average instead of zero).

<sup>13</sup> We divided nominal figures with the trend of GDP instead of the actual GDP, as the business cycle does not influence the rate in this manner.

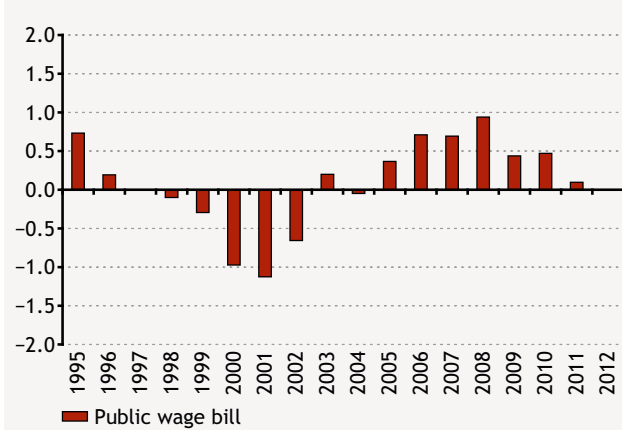
**Chart 4**  
**Partial effect of tax and contribution adjustments**

(difference between the results of the adjustments for self-reversal and policy reversal as a percentage of trend GDP)



**Chart 5**  
**Partial effect of public wage expenditure adjustments**

(difference between the results of the adjustments for self-reversal and policy reversal as a percentage of GDP)



using the moving average shows that subsequent measures such as tax hikes or tax cuts rendered these steps temporary, as they were often reversed after a few years. Obviously, this applies to aggregate tax revenue, while substantial structural shifts occurred between its components. The negative values at the end of the time series, for example, reflect that tax revenues temporarily increased above their trend, i.e. if the additional revenue was filtered out, the indicator thus obtained would reflect a larger deficit.

Based on these tendencies, nothing justifies treating the specific individual measures separately; tax revenues should rather be focused on at an aggregate level, as individual taxes can easily be terminated or reduced, while others may be increased or new ones introduced to replace them.<sup>15</sup>

## 2. Adjustment of government wages

While the majority of government wages can be considered as regular, the share of non-regular elements (bonuses, 13th and 14th monthly wages) is not negligible, and they are also highly volatile. As a result of smoothing, the increasing trend between 2000–2003 is 'brought forward', which is justified by the fact that the wages of public servants were

substantially increased in 2001 and those of other public sector employees in 2002. Following 2003, the impact of this substantial real wage increase was gradually withdrawn by the government; for this period the smoothing 'brings forward' this trend-like decrease. The exception was 2004, when the 13th monthly contribution was carried over to 2005 in the form of a 0 monthly contribution. This is reflected as a one-off saving in 2004. Besides the subsequently restored, then gradually phased out 13th monthly wage, regular wages also showed moderated nominal growth, therefore almost every year until 2010 indicated a temporary excess compared to the continuously decreasing trend.

## 3. Adjustment of net interest spending (augmented with central bank profits/losses)

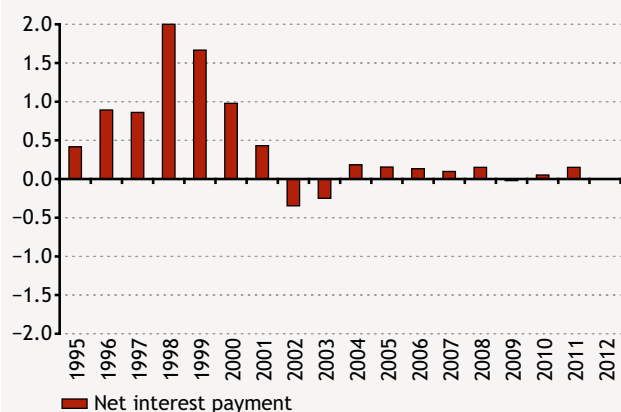
Interest spending is determined by the size of net debt and the level of interest (yield) paid. Net debt has shown an overall declining trend in most years. The effect of fluctuations in yields – depending on the weight of moving interest instruments and the average term of debt – had prolonged effects over time. Although changes in yields are an exogenous factor, debt management allows governments to actively influence the size of interest spending.

<sup>14</sup> Cyclical adjustment could have been supplemented by the calculation of the so-called price-gap; in that way we could have adjusted for the fact that the fluctuation of inflation is higher than that of the GDP deflator (P. Kiss and Vadas, 2007).

<sup>15</sup> In principle, the following measures could be considered as temporary, in part or in full, for 2010–2012: (1) The Government decided, in addition to its decision on the return from the private pension pillar to the state pillar, that the tax authority would not transfer private pension fund contributions to the pension funds for 14 months, recording them instead as government revenues. Adjustment makes sense in the case of those remaining within the private pension pillar, as those returning to the state pillar represent a permanent contribution revenue for the general government. (2) The special tax affecting the financial sector, the rate of which is fixed for 2010–2011. (3) The special tax affecting the energy sector, retail chains and the telecommunication sectors, fixed for 2010–2012.

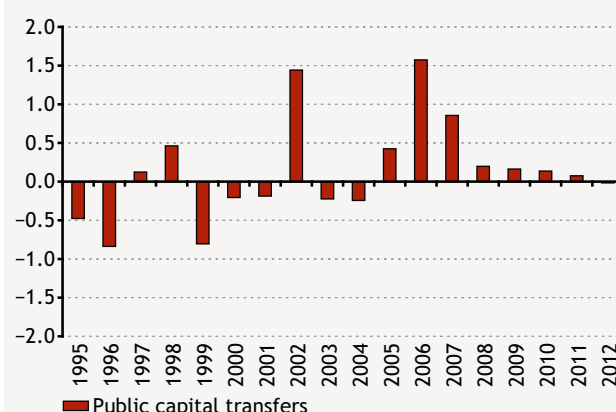
**Chart 6**  
Partial effect of adjustments using net interest spending

(difference between the results of the adjustments for self-reversal and policy reversal as a percentage of trend GDP)



**Chart 7**  
Partial effect of adjustments using capital expenditures

(difference between the results of the adjustments for self-reversal and policy reversal as a percentage of trend GDP)



Modification of the ratio of HUF and FX debt is one such possibility, which allowed savings on average interest spending in the mid-2000s.<sup>16</sup> Based on results, fluctuations in the interest balance were sizeable at the end of the 1990s, from which point on their effect progressively declined. Overall, the balance-improving effect is predominant, stemming from the quasi-continuous decreasing trend followed by net interest spending.

#### 4. Adjustment of capital expenditure, net of EU funds

In the previous chapter on the adjustment for self-reversal, we calculated the level of investments controlled by the government through the adjustment with quasi-fiscal activity and the related capital transfers. We will now examine 'normal' government capital expenditures, excluding debt assumptions related to quasi-fiscal activity.

The government's investment activity can be quite volatile, and is substantially influenced by individual projects, especially in small countries. In Hungary, investment expenditures are higher in election years, both on a

municipal and central level (2010 forms an exception to this, when investment expenditures hardly exceeded the average). This expenditure should be taken in the net sense, that is real asset sales and the fluctuation of capital revenues from the EU, granted as funding for government investments should be netted out.

Government capital expenditures also include capital transfers, in addition to investments.<sup>17</sup> The ex-post funding of quasi-fiscal losses took place primarily in election years; we have already adjusted the self-reversing effects thereof in the adjustment for self-reversal. The adjusted capital transfer, however, fell below the average in 2002 and 2006, i.e. the effect of quasi-fiscal debt assumption probably crowded out capital transfers supporting private investments. On the level of capital expenditures taken together with net investments, however, outliers in the election years can still be identified. This adjustment can be interpreted as a recognition that adjustments following elections are always simpler if the additional expenditures are spent in the form of capital expenditures.

<sup>16</sup> Nominal interest rates are lower in FX compared to HUF, as the latter also includes the expected cost of inflation in Hungary. The risk of depreciation offset lower FX interest rates, which although increasing the value of FX debt taken in HUF, it increases the value in HUF of FX interest payments to a smaller extent. In the past (until 1999), in contrast to international practice, the MNB contracted the majority of FX loans under its own name, keeping them on its balance sheet. This is what justifies, amongst others, that net interest spending is smoothed out together with the central bank profits/losses.

<sup>17</sup> The OECD methodology recommends smoothing using the HP filter for the balance of capital transfers granted and received (Joumard et al., 2008). In the long run, this method ensures that the sum of adjustments approaches zero, with outlying values spread out forwards and backwards. Based on the available information, our adjustment for self-reversal distributes capital transfers financing the quasi-fiscal loss backwards, while distributing capital revenues considered as creative accounting forwards or backwards. Our adjustment for policy reversal distributes EU transfers and capital transfer expenditures excluding the effects of creative accounting based on the moving average method.

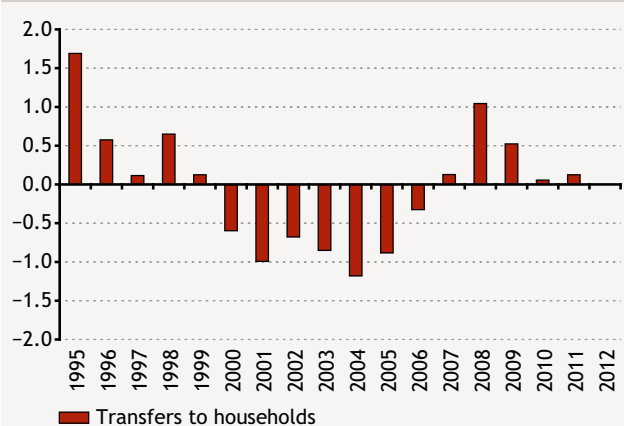


### 5. Adjustment of social transfers

Transfers to households in cash (pensions, welfare benefits, unemployment benefits) represent sizeable expenditure items. Developments therein were determined by the uncompensated surprise inflation in 1995–96. Subsequently, growth in these transfers declined for years; the moving average method illustrates the effect of this brought forward. In 2000, the trend reversed, as substantial additional expenditures were paid from 2002 (one-off increase in pensions, gradual introduction of the 13th monthly pension, etc.). Afterwards, due to the impact of the termination of the 13th monthly pension payment in 2009–2010, the sign of the adjustment is reversed from 2007.

**Chart 8**  
Partial effect of adjustments using social transfers

(difference between the results of the adjustments for self-reversal and policy reversal as a percentage of trend GDP)



### SUMMARY OF THE VARIOUS METHODS, PRESENTATION OF RESULTS

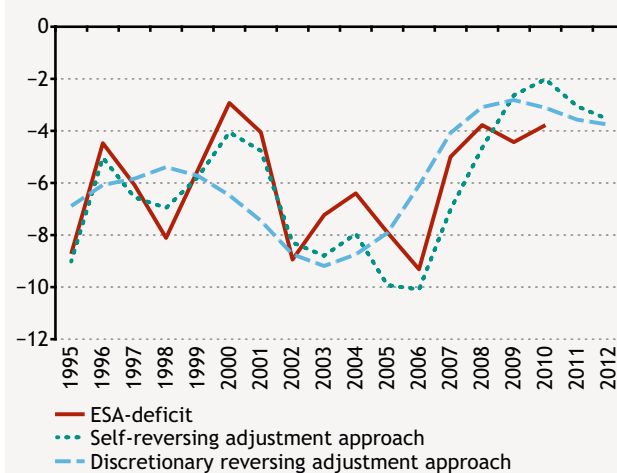
As presented earlier, adjustments have various levels. At present, the MNB’s set of analytical indicators uses the cyclically adjusted augmented (SNA) deficit for presenting underlying fiscal developments excluding temporary effects. Our article also presented another approach for filtering out temporary effects. As mentioned earlier, the interpretation of the two indicators can differ substantially. The adjustment for self-reversal assumes actual – cyclically adjusted – revenue and expenditure levels (as a percentage of trend GDP) for the future as well, i.e. it does not examine whether the value of investments was an outlier or not. By contrast, the adjustment for policy reversal takes into account the return of an investment to previous levels years before its actual occurrence, in other words it presents a

more favourable situation. The fundamental issue for the forecast horizon is whether the former or the latter assumption proves to be realistic. The following chart – also containing the period under review – clearly shows that while the adjustment for self-reversal smoothes the volatility of the ESA deficit to a certain extent, only the moving average indicator is able to ‘look through’ the four-year electoral cycle.

The two local minimums and one maximum stemming from the adjustment for policy reversal essentially ‘bring forward’ the turning points (found by the adjustment for self-reversal) of the following 2-3 years. This once again highlights the importance of the underlying assumptions used to extend actual data with projections. According to our experience, ‘good news’ tends to be announced earlier than ‘bad news’, focusing solely on government announcements results in a biased forecast.<sup>18</sup> One possibility is to assume that expenditures and revenues tend towards a certain reference value. In our article, we opted for another alternative: we accepted the effect of tax cuts announced in advance, but considered their effect on the deficit only partly permanent using the moving average method. Based on the moving average method, we considered three-quarters of the impact of measures announced one year in advance, half of the impact of measures announced two years in advance and one-quarter of the impact of measures announced three years in advance as permanent. For the remaining part, the adjustment for policy reversal assumes offsetting (reduction in the deficit). By contrast, the adjustment for self-reversal

**Chart 9**  
Headline deficit (as a percentage of GDP) and the indicators filtered of temporary effects

(as a percentage of trend GDP)



<sup>18</sup> The five-year tax reduction programme announced in 2005, for instance, was not implemented; instead, taxes were raised.

does not contain either the implementation of announced measures or the partial offsetting thereof, i.e. automatically shows the no-policy-change scenario.

Both of our adjusted indicators reflect that the 'actual' budgetary developments, permanent in the medium term, may deviate from the developments reflected in headline indicators both regarding the past and the future. This highlights the importance of adjustments. Obviously, none of the methodologies presented reflect trends perfectly, but they can indicate – especially for the past – the permanent or temporary nature of fiscal developments. Breaking down the results of our adjustment for policy reversal to components can illustrate certain fiscal developments more in detail (such as wage policy, changes in the tax burden, modification of pension rules, etc.).

Regarding the entire period, our findings show that the adjustment for self-reversal reveals a higher deficit than the headline indicator, as on the one hand, incomplete cycles appear in cyclical adjustment, and on the other hand, the impact of creative accounting is not reversed on this horizon (stemming from incomplete debt assumptions and private public partnership instalment payments spread out beyond the forecast horizon). The sum of adjustments for policy reversal is not equal to zero, as the overall improvements of the deficit over this period is 'brought forward' by the forward-looking moving average. At the same time, the methodology of adjustments ensures in principle that the adjusted and unadjusted indicators are equal in the long run.

The methodology used in the European Union, based on a focus on individual one-off items, results in adjusted and unadjusted indicators that are not equal even in the long run, tending towards the optimistic bias (smaller structural deficit). International experience also shows that the weight of these items is usually small, rarely exceeding a few tenths of a percentage of GDP, therefore they essentially do not alter the level or dynamics of headline deficit figures.

In summary, it can be said that no matter which measure of the underlying deficit excluding temporary effects we consider, a substantial permanent improvement can be

observed from the outstanding deficit level of 2006, an improving trend which will probably be interrupted in 2009–2010. As a result of permanent deficit increasing measures funded partly by temporary revenues, indicators filtered of temporary effects may again deteriorate slightly. This deterioration remains hidden in the headline figures due to temporary tax and capital revenues. We have not included the 2011 ESA deficit in the above chart, as it is affected by the capital revenue from private pension funds that in case of a 100% return to the state pension pillar, it would temporarily turn into a headline surplus. By contrast, adjustments for self-reversal and for policy reversal give robust results, as neither indicator is improved by the capital revenue from private pension funds.

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