Gábor P. Kiss

Moving target indication:
Fiscal indicators employed
by the Magyar Nemzeti Bank

MAGYAR NEMZETI BANK

Gábor P. Kiss

Moving target indication:
Fiscal indicators employed
by the Magyar Nemzeti Bank

The views expressed here are those of the authors and do not necessarily reflect the official view of the central bank of Hungary (Magyar Nemzeti Bank).

Contents

Abstract

This study defines various fiscal indicators for different analytical purposes, adjusting for the distorting effect of creative accounting. It presents these indicators using the example of Hungary.

The study abandons the general view that an identical balance is produced from the two traditional definitions of the general government deficit, as deficit indicators resulting from the flow of funds calculated as the balance of revenues and expenditures (above the line) and changes in financial assets and liabilities (below the line) may vary. Firstly, the treatment of the loss of contributions transferred to private pension funds causes a difference, as in contrast to a tax cut, this does not constitute a flow of funds, but nevertheless increases the amount of public debt. Secondly, while accrual-based accounting is justified for defining assets and liabilities, accrual-based and cash-flow recording may be applied in relation to flow of funds, depending on which is more appropriate for estimating the effect or fiscal *impulse* on the economy. Accrual-based accounting adjusts fluctuations in cash-flow recording, but it identifies the economic impact only if there are *neither* liquidity constraints *nor* unexpected fiscal measures in the economy. In this case namely, the economic agents do not react to cash-flow fluctuations. If, however, the economic agents are *either* subject to liquidity constraints *or* unexpected measures are taken, they are also affected by the sudden changes in cash-flows.

Contrary to conventions, the study draws a distinction between the two types of deficit indicators through the introduction of different terms. It continues to define the indicator identifying flow of funds as deficit, while it terms changes in assets and liabilities as a financing requirement. On the one side, the indicator defined as deficit constitutes the basis of the calculation of the impact on the economy and external balance *('impulse')*. The *composition* of this fiscal impulse plays a decisive role, particularly the impulse on households and changes in indirect taxes. On the other side, the analysis of the financing requirement – that is, changes in assets and liabilities – provides the basis for determining which revenues and expenditures are deemed to be temporary and which are of a permanent *('underlying')* nature.

The study determines the categories of the *augmented deficit,* indicating flow of funds, and the *augmented financing requirement,* measuring changes in financial assets and liabilities, on the basis of the IMF method for filtering the effects of creative accounting. Statistical recording, namely, needs to be augmented with the financial requirement of organisations conducting quasi-fiscal operations and the simultaneously accumulating quasi-fiscal debt. The 'one-off' capital transfer related to the subsequent assumption of this quasi-fiscal debt needs to be filtered out. In our experience, the augmented deficit has advantage of being consistent in a macroeconomic sense and methodologically more stable than the statistical deficit, as the latter frequently requires revisions. Naturally, the actual figures of the augmented deficit may change to a certain degree, as the analytical adjustments need to augment data with estimates in the case of the quasi-fiscal operations and creative accounting. As a favourable change in relation to the data requirement, from 2010 the official budget accounting includes public investments which are statistically recorded as private investments.

JEL: E32, H62.
Keywords: cyclical adjustment, creative accounting, fiscal impulse, structural (underlying) deficit.

Összefoglaló

A tanulmány különböző elemzési célokra többféle fiskális mutatót definiál, eközben kiszűri a kreatív könyvelés torzító hatását. Mindezt konkrétan bemutatja Magyarország esetében.

A tanulmány szakít azzal az általános felfogással, amely szerint az államháztartási hiány két hagyományos definíciójából számszerűen azonos egyenleg adódik, mivel a bevételek és kiadások egyenlegeként kiszámolt forrásátadás és a pénzügyi tartozás-követelés változásából adódó hiánymutatók eltérhetnek. Egyrészt eltérést jelent a magánnyugdíjpénztárakba átcsoportosított járulék kiesésének kezelése, hiszen az adócsökkentéssel ellentétben ez nem jelent forrásátadást, az államháztartás tartozását mégis növeli. Másrészt, amíg az eredményszemléletű elszámolás indokolt a tartozás-követelés meghatározásánál, addig a forrásátadás szempontjából eredményszemlélet és pénzforgalom egyaránt alkalmazható attól függően, hogy melyik megfelelőbb a gazdaságra gyakorolt hatás, *impulzus* becslésére. Az eredményszemlélet korrigálja a pénzforgalmi ingadozást, de kizárólag akkor ragadja meg a gazdaságra gyakorolt hatást, ha a gazdaságban *sem* likviditáskorlátok, *sem* meglepetésszerű fiskális intézkedések nincsenek. Ebben az esetben ugyanis a gazdasági szereplők a pénzforgalmi ingadozásra nem reagálnak. Amennyiben azonban a gazdasági szereplők *akár* likviditáskorlátosak, *akár* meglepetésszerű intézkedések történnek, akkor a hirtelen pénzforgalmi változások is hatást gyakorolnak rájuk.

Szakítva a konvenciókkal, a tanulmány eltérő elnevezések bevezetésével tesz különbséget a kétféle hiánymutató között. A forrásátadást megragadó mutatót továbbra is deficitnek hívja, ezzel szemben finanszírozási igénynek nevezi a tartozás-követelés változását. Egyik oldalról a deficitnek hívott mutató jelenti a gazdaságra, külső egyensúlyra gyakorolt hatás *(impulzus)* kiindulópontját. Meghatározó szerepe van e fiskális impulzus *szerkezetének,* különösen a lakosság felé irányuló impulzusnak és az indirekt adóteher alakulásának. Másik oldalról a finanszírozási igény – vagyis a tartozások és követelések – vizsgálata nyújt támpontot annak meghatározásához, hogy mely bevételek és kiadások tekinthetőek átmeneti és melyek tartós *(underlying)* jellegűnek.

A tanulmány a kreatív könyvelés hatását kiszűrni képes IMF-módszer alapján meghatározza a forrásátadást mutató *kiegészített deficit* és a tartozás-követelést mérő *kiegészített finanszírozási igény* kategóriáját. A statisztikai elszámolás ugyanis kiegészítendő a kvázifiskális tevékenységet végző szervezetek folyamatosan képződő veszteségével és az így felhalmozódó állami tartozással. Másrészt e kvázifiskális adósság utólagos rendezésének „egyszeri' hatása szintén kiszűrendő. Az évtizedes jegybanki tapasztalat szerint a kiegészített deficit előnye az, hogy makrogazdasági értelemben konzisztens és módszertanilag stabilabb, mint a statisztikai hiány, amelyet utólag gyakran kell korrigálni. Természetesen a kiegészített deficit tényszámai is változhatnak bizonyos mértékig, hiszen a közgazdasági korrekciók ára az, hogy a kvázifiskális tevékenység és kreatív könyvelés hatását illetően a tényadatok mellett szakértői ténybecslésekre is támaszkodnia kell. A tényszámok szempontjából kedvező változás, hogy 2010-től kezdve már a hivatalos költségvetési elszámolás is magában foglalja majd a közcélú – de statisztikailag magánberuházásként elkönyvelt – beruházásokat.

1 Introduction

To a great degree, the decisions of economic agents are shaped by information relating to fiscal policy and the position of the general government. Fiscal transparency enables economic agents to better recognise government objectives and the deviation of actual fiscal developments from the plans. In an optimal case, the appropriate regulation of general government's legal framework can provide transparency. This falls under national competence within the European Union (EU), and therefore the legal definition of the general government can be as broad as possible, including, for example, public companies. Transparency can also be enhanced through fiscal rules, such as the golden rule for example, which excludes investment expenditures from the scope of the rule, hence not encouraging the outsourcing and recording of such in the private sector. Creative accounting, namely, enables the hide the scale of fiscal deficits from voters and international institutions, providing an effective tool for fiscal policy decision-makers who consider only short-term consequences within the electoral cycle.

Owing to the loopholes in national regulation, it is common in EU member states that some fiscal activities (investments, subsidies provided by public companies) are recorded in the private sector. In principle, this should be adjusted by the second level of transparency, the statistical system (ESA) regulated at the Community level. Experience suggests, however, that such adjustment is only limited in scope; years later, fiscal data are frequently revised (in the direction of a higher deficit). This is partly owing to the fact that the fiscal framework of the EU always focuses on the most recent 1-2 years, and the fact that government statistics are not equipped with the same tools against creative accounting as applied by business accounting.

Problems with the first two levels of transparency can be solved by the calculation and publication of analytical indicators. A wider range of private and public institutions play an active role on this third level (Kopits and Craig, 1998). As an international trend, central banks monitor and assess the development of fiscal policy; this is not surprising, as fiscal policy determines – through several channels – the central bank's room for manoeuvre in enhancing macroeconomic and financial stability.[1] Conclusions drawn by research suggest that this activity of the central banks in the EU should be even more determined and made public (Bernoth and Wolff, 2006). For the purpose of performing more comprehensive central bank analyses, other studies have also proposed alternative indicators, such as balance sheets of sectors adjusted with risks (Gray et al., 2007), or the revised definition of sector delineation and transactions (P. Kiss, 2007).

The Magyar Nemzeti Bank (MNB) has always assigned high priority to the analysis of fiscal policy. Calculations have been performed to estimate implicit public debt underlying the pension system (Benczúr, 1999; Orbán and Palotai, 2006). With a view to presenting the uncertainty surrounding fiscal forecasting, from 2007 we have been publishing fan charts. Estimations of the budgetary impact of the economic cycle were published in Annual Reports (1999, 2000), in Convergence Reports (2005, 2010) and in the Reports on Inflation from November 2008. From 1998, the MNB has been publishing a fiscal indicator serving analytical purposes, as the officially published indicators were distorted for various reasons, well before accession to the EU. For the purpose of avoiding any surprises, it was necessary to inform the public and produce economically meaningful indicators.[2] This study provides a methodological update of these indicators, relying on similar

---

[1] For more detail, see summary of BIS conference volume (Mihajlek and Tissot, 2003) and the conference volume of the MNB (Temporary measures and off-budget activities, MNB Public Finance Workshop, 2007).

[2] The basic indicator was first termed as the change in assets and liabilities due to transactions, then changed to (augmented) SNA deficit from the subsequent year. For more detail, see the section of the BIS conference volume describing the MNB method (P. Kiss, 2003b). See Manual for technical description (P. Kiss, 2002b). In addition to the basic indicator, between 1998 and 2000, along with the deficit, the MNB also published an operational indicator which reduced the interest rate by compensation for inflation and increased it by the – partly hidden – loss of the central bank. Between 1999 and 2000, the MNB also adjusted changes in the primary balance for the effect of the cycle, applying the so-called Dutch method (P. Kiss, 1998).

studies published in recent years (P. Kiss, 2002a; P. Kiss and Vadas, 2004; P. Kiss, 2007; P. Kiss and Reppa, 2010; Hoffmann and P. Kiss, 2010).

From a central bank perspective, it is important to measure the extent to which government is either placing financial resources at the disposal of other sectors in the economy or utilising the financial resources generated by other sectors over the short term – i.e. how large the fiscal impulse is. According to estimates, fiscal shocks in Hungary affect – via the impact on demand – short-term inflation to a degree corresponding to the international average, which means that the effect is usually not substantial. This, however, does not always hold true, as certain measures directly affect prices, e.g. as in the case of price subsidies, administrative prices, indirect taxes. In other words, it is not only the magnitude, but also the composition of fiscal impulse which matters.[3]

The medium term, so-called underlying level of the deficit – filtering out *temporary* effects (temporary measures, economic cycle, price and yield fluctuations) – is another relevant issue for central banks. In the case of Hungary, permanently high deficit levels would also pose risk to financial stability. The analysis of the change in government assets and liabilities may provide reference to determine which items are deemed to be temporary and which are permanent over the medium term.

As discussed below, the definition of 'liabilities' and 'financial assets' is not simple; it may be necessary to adjust the official recording, for example, for creative accounting, compensation for inflation included in interest payments, etc. These adjustments, however, depend on which of the above two questions the given indicator is required to answer. According to observations, practical analysis prefers simplicity and therefore certain adjusted indicators are misinterpreted (Chalk, 2002; P. Kiss, 2002a). Therefore, justification of analytical adjustments is important for central bank analyses; we aim at defining fiscal indicators which always provide answers to well-specified questions.

In accordance with the two types of questions, the study defines two new basic indicators, as opposed to the conventions which assume these to be identical. Firstly, the *augmented deficit* indicates flow of funds as a basis of the calculation of the fiscal impulse. Accordingly, when determining revenues and expenditures, we are seeking to answer the question as to whether the given item has (short-term) economic impact at the given time. Secondly, the indicator we called the *augmented financing requirement* corresponds to the change in net financial assets due to transactions; temporary items need to be deducted from the above to compute the medium-term underlying deficit.

Our existing *augmented (SNA) deficit* indicator adjusted the official cash-flow recording of the budget; in this respect, it approximated the augmented deficit reflecting flow of funds. However, it better approximated changes in net financial assets (augmented financing requirement), in that it does not readjust the balance with the contribution transferred to the fully-funded private pension system (reclassified there). The so-called demand effect (currently defined as fiscal impulse), also published from 1998, adjusts for the additional deficit caused by this loss of contributions, as the disposable income of households did not increase; the assets accumulating in the fully-funded private pension funds may only be used from the date of retirement.

This study aims at analyzing the theoretical and methodological issues; numerical presentation of the indicators will be presented later. Accordingly, the structure of the study is as follows. In the first part, we review general problems relating to the definition of the budget balance. We then examine the issue of economic impact, discussing the role of the revenue and expenditure composition. Analysis of the underlying deficit follows, with cyclical adjustment discussed in particular. The study ends with the conclusions and illustration of the results.

---

[3] For more details on estimated effects, see Horváth et al. (2006).

2 Definitions of the budget balance

2.1 TWO TYPES OF DEFINITIONS, TWO QUESTIONS: UNDERLYING DEFICIT OR FISCAL IMPULSE?

In this chapter, we present two alternative definitions of the budget balance. These are referred to as the augmented deficit and the augmented financing requirement. The terms deficit and financing requirement are traditionally used as synonyms, but we will use these terms to define two indicators generated by different approaches. We define the *financing requirement* as the change in net financial wealth. If temporary items are removed from this financial requirement, the result is an underlying deficit which helps us in determining the degree to which the permanent component of the fiscal position contributes to the sustainability of both the balance of savings and investments in the economy and the external balance over the medium term. The *deficit* is defined as the indicator reflecting the flow of funds. This indicator serves as the natural outset for measuring the fiscal impulse, that is to indicate the magnitude of flow of funds between the government and the economy. We first discuss the definition of the 'flow of funds' and 'change in net financial wealth', followed by an analysis of adjustments, 'augmentation' to statistical data deemed necessary to produce a proper analytical indicator.

2.1.1 Two types of definitions: flow of funds or change in net financial wealth

There are two standard definitions of the balance. According to the definition used for national accounts (SNA, ESA), the general government receives or provides financial resources from or to other sectors (households, corporate sector, rest of the world).[i] The other definition relates the deficit to the change in the net financial wealth (balance of assets-liabilities) of the government sector linked to transactions.

In most cases, the two definitions are fully consistent; one approaches the definition of the balance from 'above the line', while the other approaches it from 'below the line', from the side of financing. In other words, flow of funds is realised when in parallel with the decrease of financial assets (government deposits), no other liabilities (e.g. government lending) arise. Thus, in the conventional approach, the definition of the deficit is identical to the financing requirement.

In practice, however, there may be some differences between the two approaches; we therefore propose two separate indicators. The difference results from the fact that the definition of financial liabilities and assets assumes 'ideal' conditions, where there is perfect foresight and no liquidity constraints of the agents. By contrast, it is more realistic to evaluate flow of funds from the perspective of the recipients (households, companies), who can be myopic or liquidity constrained.

As an additional problem, these two economic issues cannot necessarily be addressed with the statistical approach. Accordingly, the categories included in Table 1 correspond to economic background and not statistical 'labels'. As a good example for the differences between the statistical and economic approach, we can identify items, such as creative accounting, which are recorded above the line (e.g. capital revenue) in statistics, while they are classified as below the line items according to their economic background.

Table 1 does not include those obvious components which are qualified as a financing item by the statistics and both economic approaches. Sections A and B consist of deficit related items in all three approaches but the statistical deficit needs to be augmented with quasi-fiscal items that are hidden, temporarily financed by creative accounting (point H). Sections C, D, E and F of Table 1 indicate the 'grey area' between the statistics and the two types of economic approaches.

Table 1

Classification of fiscal items based on effects on financial wealth and economic agents

	With effect on economic agents (=*'deficit'*)		Without effect on economic agents	
With effect on financial wealth (=*'financing requirement'*)	**A. Permanent**	**B. Temporary** (self-reversing or one-off)	**C. Temporary** (self-reversing in the longer term, loss of contributions due to private pensions)	**D. Temporary** (self-reversing in the medium term due to accrued company loss)
Without effect on net financial wealth	**E. Temporary** (self-reversing in the short term, shifting cash-flow payments)	**F. Temporary** (lending seen as transfers)	**G. Financing** (compensation for inflation included in interest)	**H. Financing: creative accounting** (some of these may be seen as reversing parts of A or B type items)

C. All contributions paid by households or corporations have impacts. Despite the decrease in contributions in statistics caused by contributions transferred to the fully-funded private pension system, its short-term impact on taxpayers remains similar to that of taxes. In this sense, the contribution transferred by the government to the private pension pillar may not worsen, for example, the external balance, either; it has no immediate impact on it. It does, however, increase public debt, indicating a negative effect on net financial wealth. It is not surprising since the calculation of financial wealth is unable to take into account, as an offsetting factor, the decrease of implicit debt (valuation problem). Consistent recording could, in theory, be that the deficit and the debt is continuously increased with the estimated development of implicit liabilities, including an estimation of savings resulting from the partial switch to the private pension system.

D. There are examples where the statistical approach does not affect the deficit, which is reasonable from the aspect of flow of funds, but at the same time financial obligations are affected. Carry forward losses in the corporate tax base are such an example which allows the reduction of the positive tax base (and tax) in subsequent years. Symmetrical taxation could function as an alternative, where a negative tax could be generated upon losses, also increasing the deficit and debt. The system of carry forward loss, however, does not grant any funds in the year of the loss for the taxpayer. Under uncertainty (e.g. risk of bankruptcy), the promise of deduction of the future tax base can have a limited impact on the behaviour of certain taxpayers, and thus an imputed 'negative tax' cannot be considered in the 'flow of funds' deficit either. In the year of the loss, it is not possible to determine (valuation problem) the extent in which the carry forward losses may reduce the tax base in a later period, at the individual level of taxpayers. Notwithstanding the above, a government liability of a certain amount immediately arises in the year of the loss, in relation to which an estimate on an aggregate level may be produced.[4]

E. Similarly to the accrual-based approach, the 'change in financial wealth' type of indicator assumes that there is perfect foresight and no liquidity constraints in the case of households and companies (that is, the economic agents have access to credit or they have liquid financial assets). By contrast, the definition of the flow of funds indicator is based on more realistic assumptions, that is, liquidity constraints and imperfect foresight needs to be taken into account. Therefore, as a first approach, it seems obvious to use cash-flow recording instead of accrual-based statistics to estimate the fiscal impulse from the change in the flow of funds (Levin, 1993; Philip and Janssen, 2002; Manessiotis, 2007). It is possible, for example, that a statistical expenditure or revenue also constitutes an expenditure or revenue from the point of view of cash flow, while it does not cause a change in financial wealth. The diversion of cash-flow recording from accrual-based approach is one such example, e.g. in relation to the 13th month wage paid within the general government, the payment was made at a time other than the period of entitlement.

---

[4] There are views relating to business accounting which argue that it is warranted for companies to record tax credits related to loss accrual in the year of the loss (Williams, 1966). In practice, however, some of them cannot effect most of these in the future (e.g. they go bankrupt). In Hungary, for example, on an aggregate level only one-third of losses was realised as a tax base deduction.

Box 1
Cash-flow and accrual time of recording

The cash-flow basis takes account of transactions on the actual date of payment, and only records transactions made in cash. Accrual accounting records flows at the time economic value is created, transformed, exchanged, transferred or extinguished. The share of payments, capital transfers made in the form of government securities may be substantial among non-cash transactions. The issuance of compensation notes in Hungary is one such example. Accrual accounting records flows that imply a change of ownership when the change occurs, services are recorded when provided, output at the time products are created and intermediate consumption when materials and supplies are being used. Zero-coupon interest settlement without cash-flow, is also included among accrual data, enabling the more accurate separation of amortization and interest. The valuation of non-cash transactions (e.g. compensation notes) and the difficulty of assessing whether the debtor will meet its obligation can be a problem in relation to accrual based accounting. Therefore, in case of tax and contribution revenue, the simplest estimate of accrual based accounting is frequently applied, constituting a backward shifting of cash data by one or two months *(time-adjusted cash)*.

Some items are classified as financing by statistics but in fact they are hidden subsidies (provision of guarantee, advance, credit and 'investment'), and therefore they belong under section A or B, and the subsequent cancellation of these financial liabilities under section H. Among transaction statistically classified as financing, we can identify the 'true' market component in relation to which there is no change in net financial wealth, since liabilities are created. We can namely examine whether there is a 'market' component which produces an impact similar to transfers to households and companies. This extreme situation occurs when credit is granted to an uncreditworthy economic agents with liquidity constraints, which spend it as if the full amount were a transfer, but are later able to repay the credit.

As indicated in Table 1, the deficit recording the flow of funds and the financing requirement based on financial assets and liabilities is identical, except for the four sections discussed above, as both of these consist of the permanent items (A) and the self-reversing and one-off items (B), while points G and H – deemed to be financing items in both economic approaches – are excluded from both indicators.

G. Interest payment also includes the depreciation of creditors' capital due to inflation, but this should not be considered as income (increasing the deficit) in an economic sense, but as amortisation, decreasing the debt. The method applied by the World Bank and IMF proposes a more simple calculation prepared on the basis of total debt (Rocha and Saldanha, 1992; Tanzi and Teijeiro, 1993). Upon recognising the problem, in 1993 the SNA introduced the filtering of inflationary compensation as a supplementary statistical measure. On the basis of the above, the so-called *interest prime* may be calculated in place of the real interest rate according to more detailed, specific data related to government securities. While the real interest rate calculated from the total portfolio may be a negative value, the interest prime applied by the SNA (chapter XIX, appendix B) may only be defined as a positive value (or zero). A 'loss' recorded in the revaluation account, in an amount corresponding to the negative real interest rate (as the portion of the interest rate comprising inflationary compensation here does not cover depreciation), and the income does not decrease.

H. The identification of creative accounting, aimed at concealing the actual situation, causes a serious problem. Usually, the actual deficit is *temporarily* made more favourable than the actual situation by some techniques, and this difference appears in the deficit only with a delay in time, or possibly in a prolonged manner. We introduce below the category of *augmented deficit and financing requirement* for the purpose of applying an economic-analytical adjustment of such distortion. In this section, we applied a narrower approach of creative accounting on the basis of which the deficit needs to be adjusted for creative accounting measures not involving economically significant effects, as performed by the *Congressional Budget Office (CBO)*. This adjustment is consistent with the augmented deficit reflecting the flow of funds. By contrast, the augmented financing requirement, indicating changes in financial wealth, also classifies the deficit improving measures – listed among measures under section E – as creative accounting, as it

applies, in accordance with the definition of the OECD, to all measures improving the statistical deficit but not affecting the net wealth of general government (Koen and van den Noord, 2005).[5]

2.1.2 Creative accounting – a reason for augmenting the deficit

As noted above, the definitions of creative accounting (OECD, CBO) focus on the distortion of fiscal data, irrespective whether it occurs deliberately. In practice, however, the filtering of the distorting effect of creative accounting from the statistical deficit is difficult because the distortion is frequently linked to deliberate fiscal measures which, in fact, aim at reducing transparency, masking the deficit and circumventing budgetary rules (Alesina and Perotti, 1996; Dafflon and Rossi, 1999; Milesi-Ferretti, 2003). Such behaviour is motivated by the possible manipulation of the opinion of voters or international organisations through the formal outsourcing of expenditures or recording financing as capital revenue. Creative accounting also plays a significant role in the business sector. Some countries have reacted to the practice by introducing very detailed accounting rules and close monitoring, while other countries have placed emphasis on *substance over legal form*. In reaction to the creative accounting imported from the business sector, government statistics also require more detailed checks, with the application of *substance over legal form* criteria in some cases.[ii] Problems nevertheless arise; for example, in relation to the evaluation of government guarantees and loans, financial investments, *public-private-partnership* (PPP) contracts, no effective solutions have found yet.[6] Adjustment for creative accounting is also hampered by the fact that in every country, the statistical deficit is derived from a specific set of data, which is based on legal definitions. By way of creative accounting, a gap may be created temporarily, or over the long term, between the statistics and economically significant measures. Even temporary deviation may cause significant problems, as despite the *subsequent* revisions of the statistics from time to time, the adjustment would be informative only if effected *prior to* the creative accounting measures.[7]

We discuss below five forms of creative accounting. The first three sections (a, b, c) of creative accounting can be clearly linked to its narrower definition ('economically insignificant impact') (section H); the final two sections (d, e) may be part of both the narrower and broader ('unaffected net wealth') approach (section H or E).

a. Financing recorded as capital revenue

Among the types of creative accounting, capital revenues are generally most prominent because they are relatively simple to identify. The difference lies in the fact that some argue that the structural deficit needs to be adjusted for these items, while others believe that this capital revenue should not improve the statistical deficit even on a temporary basis.

Examples of such revenue arising on a temporary basis are one-off revenues earned through the securitisation of continuous future revenue, and sales and lease back of real property.[8] In these cases, a flow of expenditures or loss of revenues arise against the one-off capital revenue, and thus these may be deemed in part or full as a revenue financing those future flows.

The case is similar in relation to capital revenues received in exchange for receiving the pension liabilities of public companies. In this case it is particularly difficult to evaluate the liability against the one-off revenue, i.e. to determine the net current value of the future current items. The one-off revenue may thus be broken down into a financing revenue (if the one-off revenue corresponds to the liability set against it) and an item affecting the deficit. This may be capital revenue or capital transfer, depending on whether the one-off revenue is higher or lower than the liability set against it

---

[5] We wish to emphasise that both definitions (OECD, CBO) are applied from the perspective of the end result, i.e. they do not examine whether these were deliberate actions. It is possible that certain cases of outsourcings do not have a significant impact or do not affect the net wealth of general government, although they were originally motivated by enhancing efficiency. Since the end result matters from an economic point of view, the latter are classified in the category of creative accounting even if they were not motivated by circumvention of the rules. The construction of the M1 and M5 motorways in Hungary is one such example. Attempts were made by the state to pass on the construction of the network to the market sector; these attempts failed, as it became evident that the user fees would not cover the costs of the investments.

[6] Due to differences between statistical regulations and business accounting, it is also possible that a fixed asset produced through a PPP-type investment is not recorded either in the private or the government balance sheet.

[7] A permanent difference may exist between statistical and economic accounting even if certain forms of creative accounting are subsequently adjusted by way of updated methodology, as sometimes the decision is made to apply this adjustment retroactively only up to a certain point in time.

[8] The current practice of statistical recording filters out cases of securitisation where no real assets are involved in the transaction.

(Paul and Schalck, 2007). Since these transactions are commonly related to the privatisation of public companies, it is appropriate to analyse such capital revenue or capital transfer jointly with privatisation revenue realised under such conditions. It is possible that a smaller amount of privatisation revenue was realised (this cannot improve the statistical deficit) in that a larger amount was requested in exchange for receiving the pension receivables (in principle, this may improve the statistical deficit).

The lump sum recording of concession fees (e.g. UMTS) paid in advance is a similarly disputed issue, as the continuous recording of these may also be reasonable. The frequency band itself is not a produced asset, but usage rights were sold instead of its final sale. There was debate as to whether such payment should be recorded in the statistics similarly to a lease or a sale of assets. If it is deemed similar to a lease (SNA 7.128.), the accrual-based concession fee needs to be accrued for the full concession period, regardless of the actual payment.[9] The lump sum revenue eventually remained a deficit improving item, as Eurostat and the majority of statisticians supported the classification as sale of assets, but also proposing the recording of depreciation over the concession period. All economists agree that lump sum payments should be excluded from the structural deficit. However, the majority of them forget about consistency, because elimination of lump sum revenues should be followed by converting them into a flow of current revenue. Moreover, nobody examines whether those lump sum payments are identical to financing items.[10] Contrary to this practice our analytical indicator reclassifies such concession revenues as financing. This means that by deducting the one-off revenue classified as creative accounting (section H), we can consistently adjust the current revenue (section A) spreading over the concession period.

b. Quasi-fiscal activities of public companies

Capital transfers and debt assumptions appearing abruptly in the statistical deficit and debt also require special attention. Similarly to capital revenues, the majority of economists would only adjust the structural deficit for these items, while others would adjust the deficit as well. The majority of these 'extraordinary' expenditures cover accumulated losses of public companies, and therefore their appearance should be interpreted as an indication that a portion of the quasi-fiscal activities carried out by public companies has been continuously recorded outside of the statistics.[11]

The basic problem is that the statistics classify public companies in the government sector according to less stringent criteria, basically based on the share of market sales revenue, and thus the majority of these are excluded. This is because it is difficult to draw a distinction between market based and non-market based activities, which constitutes a basic criterion among various criteria determining statistical classification in the government sector. The determination of the statistical sectors is based on the economic assumption that the economic behaviour of these units is similar. The behaviour of the market sector is determined by the maximisation of net wealth, i.e. profitability criteria, while the behaviour of the government sector is motivated by the maximisation of social welfare. Against this background, we can distinguish between market production, on the one hand, and non-market production, the redistribution of income and wealth, on the other.[12]

The IMF also maintains that the separation of the corporate sectors cannot rely solely on the share of market sales revenue (or loss), but that these should also be distinguished on the basis of behaviour (Stella, 1993).[iii] The IMF first defined the deficit *augmented* with the quasi-fiscal operations of banks (conducting the distribution of income and wealth) (Mackenzie and Stella, 1996).[iv] In 2001, the IMF expanded the definition of quasi-fiscal operations to include non-financial public companies and the central bank.[v] The experts of the World Bank similarly proposed calculation of an inflation adjusted, operational deficit which also takes into account the quasi-fiscal activities of the central bank (Rocha and Saldanha, 1992).

---

[9] In the United Kingdom, settlement distributed over time is applied in the statistics, despite the relevant contrary decision of Eurostat.

[10] As a practical aspect, if the concession fee was paid by foreign investors, it is recorded among the financing items of the capital account. In this case, it would also be appropriate to classify this government revenue as financing for consistency purposes.

[11] In addition to capital injections subsequently remedying company deficits, there are examples of capital transfers made in advance. In such cases, the statistics are less satisfied with the interpretation that these are 'investments', i.e. financing items which acquire financial claims, and analyse in greater detail the operation of the given company.

[12] In simple terms, the difference between these activities is that in the case of market production, sales revenue covers not only the costs, but ensures profitability, while in the case of non-market producers sales revenues are fully or partly substituted with tax revenues or indebtedness and depletion of assets. The government – as an owner and regulator – determines the company's price policy, the volume of the provided service and the amount of subsidy funded by tax revenues to reduce losses.

Estimates have also been prepared on the quasi-fiscal deficit of some emerging countries' central banks (Markiewicz, 2001). In 2004, the IMF proposed stringent criteria for the classification of state companies.[vi] The analysis of the government sector as defined by statistics was not considered to be sufficient in many countries. In the United Kingdom, instead of separating public companies, the official scope of general government was expanded to *all* public companies, and in 1998 the net borrowing indicator of the government sector was defined.[vii] New Zealand, Italy and Portugal published similar consolidated indicators, although in the latter two countries, instead of gross recording, the official budgetary indicator was only augmented with the net impact of quasi-fiscal activities (Overview: Kopits and Craig, 1998). From 2010, pursuant to the Hungarian budget act defining the calculation of the official deficit indicator, the proportionate amount of the accounting profit/loss of majority state-owned companies should have been recorded as revenue or expenditure, depending on the sign of the balance. This means that the profits or losses could be recorded with a one-year delay; the financing requirement which includes investment spending instead of the amortisation of the fixed capital, however, still would not constitute part of the official deficit. With reference to this inconsistency the whole adjustment was removed from the law from 2010.

c. Outsourcing of public investments into PPPs

While capital revenues and capital expenditures may indicate the presence of creative accounting, public investments in a PPP form basically remain invisible, as these are recorded in the deficit distributed over a longer period. The accumulation of non-market fixed assets in a PPP form is also classified among the quasi-fiscal operations discussed above, with the difference that it is commonly performed by a privately-owned company instead of a public company, in exchange for a long-term commitment by the government. Such PPP outsourcing simultaneously circumvents the given annual deficit and debt, while it does not improve the net wealth of general government (the commitment results in future expenditures or loss of revenue)[viii] (Milesi-Ferretti and Moriyama, 2004; Koen and van den Noord, 2005).[13] The rapid adoption of the PPP form was promoted by the fact that the short-term impact improving the deficit is favourable for fiscal policy, yet the costs of the long-term commitments are heavily discounted; the private partner, however, seeks to acquire as much government funds ('rents') as possible through long-term contracts (Monteiro, 2007).

The problem related to PPP outsourcing was recognised in the United States in the past. Therefore, similar to business accounting, the CBO applies stringent principles for classifying PPP-type schemes as included or excluded from general government. One reason for the above is that if business accounting does not allow the recording of a fixed asset by the private partner, it needs to be recorded in general government. The final risk is also assessed to determine classification; whether the fixed asset is of a general nature or it specifically serves general government purposes, and whether it has a private market or is easy to sell, if necessary. According to the World Bank (Irwin, 2003), it would be appropriate to shift away from a binary classification – that is, completely private or completely general government classification – in the direction of a continuous classification which would distribute the value of the asset among the sectors in proportion to the rights and obligations. (This requires the resolution of the valuation problem.) The net financial wealth of general government should be augmented with liabilities resulting from investment, as the initial decrease in expenditure realised through the outsourcing of an investment is set off by the subsequently payable amortisation and interest.[14] The PPP, however, should not only augment changes in financial wealth, but also government investments in relation to the calculation of the balance indicating the flow of funds, as it clearly represents a public purpose, government-specified investment. While government investments have an immediate impact on the deficit and the external balance, only the impact on the external balance of similarly government-controlled PPP investments is visible because the financing of the private partner hides the immediate effect arising in the deficit.[15] As a solution, all PPP investments could be reclassified as government investments (P. Kiss, 2008). From 2010, pursuant to the Hungarian budget act defining the calculation of

---

[13] Since it circumvents both the debt and the deficit, PPP is also not indicated in the value of the *stock-flow-adjustment* (SFA), reflecting the difference between the two categories. Thus, the SFA used for estimating creative accounting on the balance sheet side does not indicate this item.

[14] In principle, one could argue that improved efficiency and the future rise in solvent demand may reduce the commitments of the government. But the contrary may also occur; the financing of such schemes generally involves higher costs (if the state can access credit cheaper than the private partner), and solvent demand may decline as a result of demographic, regional and technological changes.

[15] Of course, the two types of government-specified investments can vary from a financing point of view; amongst other things, one is immediately visible in public debt, while the other is not, and their costs are also difficult to compare.

the official deficit indicator, PPP investments of the central and local governments must be recorded as expenditure on the date of activating the fixed asset.[16]

d. Provision of government support in the form of 'financing'

As noted above, government functions include the distribution of income and wealth. This, however, does not necessarily appear as transfers, but is recorded as 'financing' or remains hidden in the form of quasi-fiscal activities performed by a company (bank) under government control. In other words, direct government lending, although it circumvents the deficit, is present in the gross debt, as it needs to be financed. By contrast, guarantees are not reflected in either the deficit or the debt, until the guarantee is actually called. While in the 'normal period', this mainly supports the quasi-fiscal activities of public companies, in times of crisis, private companies are also granted this kind of government support.

Such activities easily tend to remain outside the scope of official recording, because owing to the problem of valuation, it is difficult to assess the degree to which the government has acquired financial claims in case of policy lending, and the probability of guarantee being called. Later, however, on the date of the write-offs of the liabilities or the assumption of debt accumulated as a result of the quasi-fiscal activities of the banks, or the call of the guarantee, all of these items may also appear in the official deficit as capital transfers.

By defining hidden subsidy included in loans, the IMF and CBO distributed these items into market (credit) and non-market (subsidy) components.[ix] The CBO expanded its estimation method to include loan guarantees. Since 1990, US legislation stipulates that federal agencies are required to prepare annual estimates in relation to subsidy contained in the loans and guarantees they provide. With regard to methods of separating loans into market loans and transfers, see Wattleworth (1993). This policy lending overlaps with the aforementioned quasi-fiscal activities (see clause b), as these are frequently provided by state banks or holding companies. In the past, statistical recording did not settle any loans provided by general government as subsidy; according to the new methodology, however, it will be possible to separate these into subsidy and credit. According to the statistical practice relating to guarantees, after three calls, the full amount had to be recorded as subsidy.

e. Distortion of cash-based and accrual-based accounting

In relation to the simplest accrual-based accounting, the timing of tax refunds may also distort the deficit[17] (P. Kiss, 2007a). We can also observe that certain EU countries improve the deficit through inconsistency between cash-flow and accrual recording (Buti et al., 2006). Since – using the timing of certain revenues and expenditures – the government can allocate the deficit among the given years without producing an economic impact, the CBO also applies these corrections to adjust its analytical indicator. The presence of an economic impact is judged by whether the assessment of the private sector relating to its real income changes in reaction to the measure. Thus, if revenues or expenditures are shifted only between the end and beginning of the year, it is assumed that there is no impact.

2.2 HUNGARIAN DEFINITION OF THE DEFICIT AND FINANCING REQUIREMENT

2.2.1 The base indicator is the official cash flow deficit instead of ESA

In principle, the national accounts (ESA) or the official recording subject to the budget act may constitute the basis for adjustments serving analytical purposes.[18] The two methodologies, however, vary significantly (P. Kiss, 2002b):

– In the budget law, the official recording is the modified cash flow approach; the ESA applies accrual-based accounting which may be estimated in several ways, either with simpler or more information-intensive methods.

---

[16] This provision is not applicable to the PPP investments of state majority-owned companies only if these are not based on decisions of the owner; the rule is not applicable to local government-owned companies. A certain degree of distortion may also occur from the date of activating the fixed asset, as investment expenditures spanning several years would appear as a lump sum in the deficit in contrast to a traditional investment, where instalments are paid during implementation.

[17] The simplest accrual based approach simply shifts the cash flow figures by a few months *(time-adjusted cash)*.

[18] Similarly to many other countries, official recording in Hungary is based on the previous cash flow methodology of the IMF (GFS86).

– According to the ESA methodology, financing items may not improve the deficit; in the official budgeting, however, government lending and its repayment (and privatisation revenue until 2007) have an impact on the deficit.[19]

– The official deficit excludes several capital transactions, e.g. those conducted through the provision of government securities, while the ESA deficit includes these not only cash transactions.

– In determining the coverage of general government, official accounting is based on the legal definition; ESA augments this with state-owned companies qualified as 'non-market producers'.

– The ESA methodology qualifies the majority of PPP investments as private investment, and thus their budgetary impact appears as distributed over the contract period (in the form of an availability fee). From 2010, the official budget will include the PPP investments of general government as at their activation.

The differences between the two methodologies partly result from varying assumptions. These assumptions, however, should *not* be automatically accepted in either case. Various problems arise in connection with application of the ESA methodology.

– From a practical point of view, the largest problem is that relevant ESA revisions are only carried out subsequently, years later. As noted above, this is a general practice in EU countries. Thus, for example, public companies or PPP programmes are included in ESA accounts retroactively, and therefore the statistical data can be considered a moving target.

– As a theoretical problem, the application of accrual-based accounting is justified if the behaviour of the private sector is *not* determined by the cash-based revenues and expenditures of the current period. According to some experts the cash flow deficit serves as a better basis for analytical purposes, e.g. cyclical adjustments and determining and measuring various targets (e.g. monetary programme), and for the purposes of measuring fiscal impulse (Levin, 1993; Philip and Janssen, 2002; Manessiotis, 2007). Cash flow also performs better if the change in debt is analyzed, as it is completely consistent with it. The projection of cash flow figures, however, requires caution; temporary effects need to be filtered (see, for example, the broader underlying deficit). In practice, accrual-based accounting may systematically differ from changes in debt, as it continuously record higher tax revenues than the cash flow (Olivera–Tanzi effect).

– In principle, the ESA methodology tends to classify state-owned companies as 'market producers' too easily, and thus the coverage of the government sector is narrower than justified due to the partial exclusion of quasi-fiscal activities. This issue is discussed under clause b. Similarly, most PPPs are classified as private investment (see clause c).

– In principle, in respect of loans, guarantees and capital injections provided by the government, the current ESA methodology assumes that these are identical to market-based loans, guarantees and investments. Since these often simply finance quasi-fiscal activities, this problem is partly correlated with the fact that the coverage of the government sector is too narrow. Official recording, however, increase the deficit by lending and capital transfers as non-market-based, policy transactions. It generally regards assets acquired in this manner as unmarketable which is a realistic assumption in the case of financing related to quasi-fiscal activities. If, however, the government loan is eventually repaid, the revenue can improve the deficit. On the basis of the revenue representing such a partial recovery, the actual market/non-market distribution can be identified ex-post, somewhere between official recording and the ESA approach.

– On the one hand, there is the practical problem that while on the basis of background information, we can perform the adjustments from cash flow data to accrual-based accounting, we are only able to retrieve cash figures *(time-adjusted cash)* from accrual-based recording if these are available in their simplest version (shifting cash flow data by one or two months). On the other hand, the method of accrual-based accounting has changed over time: in the case of certain taxes, the simpler version has been substituted by the method relying on tax returns. This was necessary because with the timing of refunds, the ESA deficit significantly changed even without a change in actual macroeconomic developments.

---

[19] Privatisation revenues were usually deducted from revenues in the case of the official presentation of the deficit.

Chart 1
Steps for calculating the augmented deficit and financing requirement
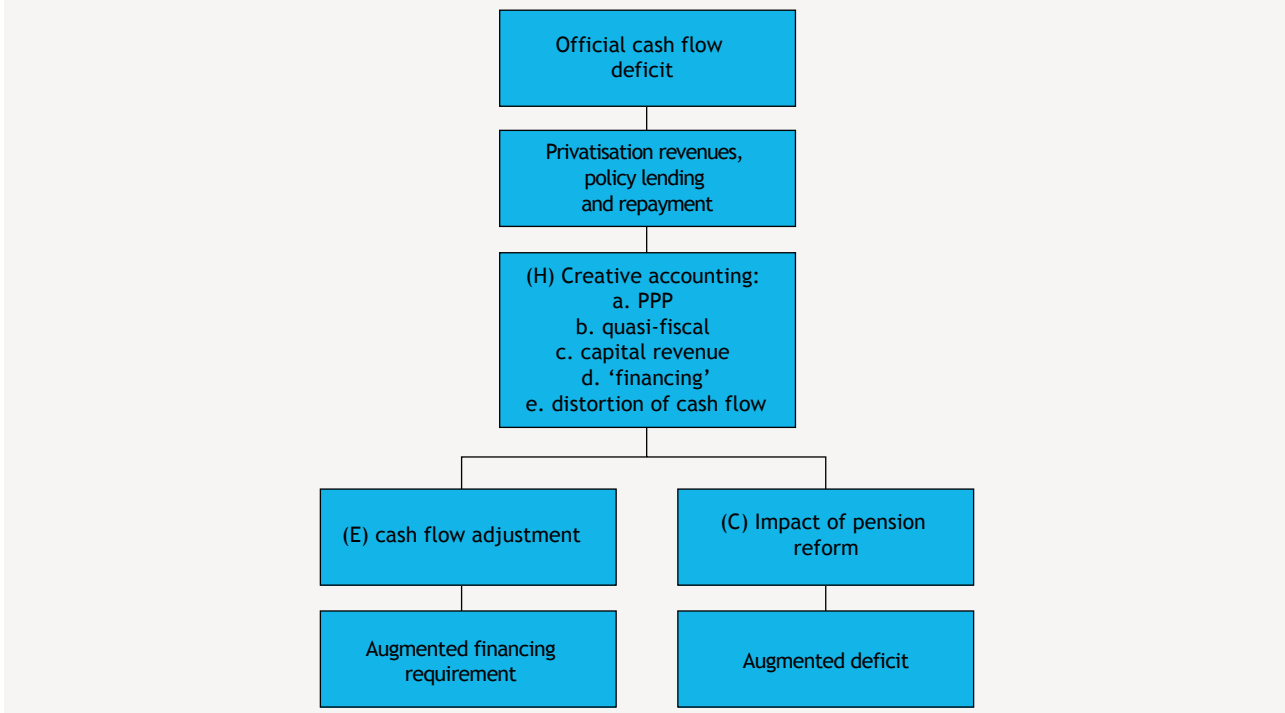
– Another frequent problem is that companies which are eventually classified within the ESA government sector are only partially included, e.g. their expenditures are partly classified as below-the-line financing items, or their actual expenditure liabilities seem smaller due to the deferred issue of invoices.[20]

These problems can be resolved through the introduction of alternative economic indicators, if suitable information is available. Thus, the CBO, the New Zealand Treasury and the MNB, for example, have sufficient data and background information which enable the calculation of the alternative indicators.[21] From the 1990s, the MNB has been processing official cash flow data and preparing detailed time series in a monthly-quarterly breakdown. Of course, this is only a starting point, and additional background information is required for the necessary adjustments. Since measures have regularly distorted the official data (typically aiming at masking the true deficit), we have performed adjustment of these data on a regular basis. In addition to information relating to annual accounts, we also used publicly-released company balance sheets, our own collected data, press information and estimates by our experts. As a major improvement from 2010, data relating to the PPP investments of general government will be available in the official accounts.

Before reviewing in greater detail the method of setting up our alternative indicators, the augmented deficit and the augmented financing requirement, Chart 1 summarises the main steps of the calculation.

Chart 1 show that the inflationary compensation included in the interest payments (section G) was not deducted from either indicator. This adjustment is made in a simplified form in the course of calculating our final indicator (fiscal impulse, broader underlying deficit). In calculating the fiscal impulse, we consider the change in the augmented primary balance, i.e. we deduct the central bank's profits/losses and the net interest payment. In relation to adjustment for temporary effects, inflationary compensation and real interest are smoothed together.

---

[20] Some of the expenditures of the Hungarian Privatisation and State Holding Co. (ÁPV Zrt.) were classified as investment, and the eligible expenditures of road construction were reduced in 2003–2004, with the deferred issue of invoices.

[21] At the end of the 1990s, the New Zealand Treasury computed an indicator similar to the method applied by the MNB *(economic fiscal indicator)*. Philip and Janssen (2002) made a similar proposal in 2002. Their method for estimating the fiscal impulse is based on cash flow data, performing adjustments for certain items, e.g. for the provision of advances, loans and guarantees.

The chart excludes borderline cases between financing and subsidy (section F) because these are of a negligible amount in our case.

In the following we discuss in detail the steps for determination of the augmented deficit and augmented financing requirement.

2.2.2 Adjustment of the deficit for privatisation revenue, policy lending and repayment

In this section, we present an overview of the financing items which are included among official revenues and expenditures, but for which the official deficit needs to be adjusted, since they should not affect the deficit. Thus, for example, revenue resulting from privatisation (prior to 2007), policy lending and repayment related thereunto *('lending minus repayment')* is settled as an item affecting the official cash flow deficit, similarly to the earlier GFS system (of 1986) of the IMF.

Privatisation revenues represent more substantial items which are relatively easy to identify, since the middle of the 1990s, the budget act includes not only the official deficit of the general government, but also a deficit indicator adjusted for privatisation revenues. The deficit of local governments was officially not adjusted for privatisation revenues, although the adjusted local government deficit was also recorded in the summary general government tables included in the annex of the budget law. Since, however, the deficit was not adjusted for the social security privatisation revenues between 1997 and 2000, these four years need to be modified separately.

The (so-called indirect) privatisation revenues realised and paid by state-owned organisations constitute a special type of privatisation revenue – these are also deemed to be financing. In relation to Hungary, this means that the deficit should not be reduced by either privatisation payments made in relation to the Hungarian Post and Szerencsejáték Zrt. (Gambling Co.) or the payment of MNB, realised from the sale of shares in HIB (Hungarian International Bank) and CIB (Central-European International Bank), but these may only be recorded as financing. Similarly, the dividend payment required in the course of the privatisation of Budapest Airport must be classified as indirect privatisation revenue.

Lending by general government and its repayment represents a smaller category. In the budget law, expenditures also include lending. After 1997, this constituted only smaller amounts in relation to certain extrabudgetary funds and subsidised projects. By contrast, loans provided to local governments rose continuously between 1997 and 2001, followed by stabilisation of the annual amount. Similarly, amounts repaid from loans –recorded under revenues – decreased in the budget after 1997, but rose for several years in relation to local governments. All of these items are easy to identify on the basis of the budget execution laws.

Expenditures related to the redemption of state guarantees appear among official expenditures. Adjustment of the official accounts is justified in three cases. Firstly, on the basis of the partial recovery of guarantees recorded under revenues, we may conclude that a portion of expenditures related to guarantees is similar to lending, i.e. it is not necessary to include this in the augmented deficit.[22] Secondly, the guarantees could have included formal guarantees related to privatisation. In connection with the privatisation of Budapest Bank, for example, the general government assumed a commitment for a likely foreseeable expenditure which was then actually paid out in 1999. It is warranted to link this expenditure to earlier privatisation revenue, and it must also reduce the augmented deficit in 1999. Thirdly, it is necessary to examine whether there are any expenditures which cover past losses arising in the public sector. Official expenditures need to be reduced by such items, and in parallel, these must be distributed within the augmented deficit of the previous years as imputed current subsidy provided to state companies.

---

[22] This is of a negligible value since the establishment of MEHIB and Eximbank. In the past, however, in 1993, for example, the budget settled expenditure corresponding to 0.2% of GDP due to the guarantee provided in connection with earlier grain exports, the larger portion of which was recovered in 1996.

2.2.3 Adjustment of the official deficit for the impact of creative accounting

We undertook the estimation of creative accounting items presented under section H (and in a wider sense, sections H+E) using the detailed, individual analysis of statistical revenues and expenditures, similarly to an approach adopted in international practice (Dafflon and Rossi, 1999; Koen and van den Noord, 2005). The other approach performs this estimate at the aggregate level, instead of the analysis of individual items. This is the case in relation to the filtering of fluctuations in net capital transfers (Joumard et al., 2008), or changes in net financial wealth or debt can be compared to the amount of the deficit (Easterly, 1999; Kharas and Mishra, 2005; Milesi-Ferretti and Moriyama, 2004; Buti et al., 2006). In an aggregate analysis, however, not only is it impossible to distinguish sections E and H, as noted above, because there are other creative accounting measures which also cannot be identified with this simpler approach. We will discuss below how the aforementioned forms of creative accounting can be quantified in practice.

a. Financing recorded as capital revenue

Capital revenues qualified as financing (advance payment) play a relatively minor role in Hungary until 2010, but may grow to a sizeable amount in 2011. Similarly to other European countries, second and third generation (USM) telecommunication frequency rights were sold in Hungary. The lump sum payments equalled 0.6% of GDP in 1994, 0.3% in both 1999 and 2000, and 0.1% in both 2004 and 2005. In our augmented indicators, we deducted these revenues and distributed them over the whole period. We similarly deducted the amount (0.3% of GDP) paid by MOL Nyrt. in 2005, in connection to the exploitation of balancing gas, and distributed it through the subsequent five years. Capital transfer paid by persons who decided to return from the fully-funded pension scheme to the state pension pillar was also excluded (0.1% and 0.2% of GDP in 2009 and 2010). This revenue was spread over the past years, because that is what would have happened if these persons had continuously remained in the state pension pillar. In preparing the Report on Inflation in December 2010, we assumed that capital revenue of 2% of GDP can be realised in both 2011 and 2012. Similarly, this amount was spread over the past years by decreasing the gap by 0.4% of GDP between the augmented deficit and the augmented financing requirement.

b. Quasi-fiscal activities of public (or partly state owned) companies

The distinction between the behaviour of the private sector and general government on the basis of motivation is a fundamental economic question. Accordingly, it is necessary to draw a distinction between market production, on the one hand, and non-market production and distribution of income and wealth, on the other hand. The latter quasi-fiscal activities are motivated by the maximisation of social welfare and are therefore recorded in the general government sector, regardless of whether they belong to the corporate sector in the legal or statistical (ESA) sense. For the purpose of distinguishing the various forms of quasi-fiscal operations, in the following we separately discuss companies which take part in non-market production (section b), the accumulation of non-market fixed assets (section c), and the distribution of income and wealth (section d).

Public companies (providing infrastructure, public services) take part in non-market production and their activity is not motivated by profit maximisation, but their behaviour is more social or economic policy oriented. With regard to Hungary, this adjustment affects the railways network and passenger transport parts of MÁV (State Railways), Nemzeti Autópálya Zrt. (NA Zrt., National Motorway Co.) responsible for road network development, Állami Autópálya Kezelő Zrt. (ÁAK Zrt., State Motorway Management Co.) and certain public transport companies (BKV Zrt.). Certain public service providers and companies subject to administrative price regulation (MVM Zrt., MOL Nyrt.) may provide discounts to the public in certain years, on the basis of government measures. Owing to the regulatory role of the government, this is also possible if such companies are not (or not fully) state owned.

There are two ways to record the effects of such activity. According to one method, the whole company is deemed to be part of the general government sector, and thus one can record the market revenues as sales and fee revenues, operating expenditures as wage and purchase of goods and services, the accumulation of fixed assets as investment.[23] This gross

---

[23] The 'deficit' of the companies to be reclassified does not include depreciation, i.e. similarly to general government, it corresponds to the difference between current revenues and expenditures and the amount of investment expenditures. Depreciation of fixed assets does not affect the financial position of economic units or the financing requirement of the economy at the national level.

method shows the composition of the fiscal impulse, but requires additional information (practice of the United Kingdom, New Zealand). According to the simpler method, the difference between current revenues and expenditures may be settled as an imputed current transfer, regardless whether the consequence was a loss or reduced dividend (practice of Italy and Portugal).[24] If the budget covered only a portion of company investments, the amount covered with borrowing may be considered as an imputed capital transfer. Our alternative indicators have taken this net approach so far, but in the future we will also attempt to perform gross recording in relation to companies (e.g. MÁV) deemed significant in relation to sales revenue and wage expenditures.

Box 2
Can extraordinary items be distributed in the nineties?

In this regard, the economic adjustment performed by the MNB so far has remained one-sided in relation to so-called extraordinary items; these were particularly relevant in the first half of the nineties and essentially related to the settlement of losses in earlier periods (See P. Kiss and Szapáry, 2000). We did not consider these items in the augmented deficit either on the date of capital transfers or as distributed in time. Since the financing requirement remaining hidden in the past is primarily linked to government decisions, for the purpose of evaluating the impact of these items on the economy, debt assumptions should also be assigned to years in which they actually arose. In the early nineties, the losses of public companies were not included in the deficit. Moreover, due to the carry-forward losses, the losses did not even reduce corporate tax in these years, and due to the expiry of the loss carry-forward period, their deferred impact was also limited. It is also appropriate to distribute the one-off expenditure related to the quasi-fiscal investment (power plant construction in Bős–Nagymaros) and home construction loans through the given investments' years of implementation. Russian debt repayment effected through providing military equipments varies from the above cases, where the problem is linked to repayment made at irregular intervals and the resulting fluctuation in defense expenditures and the balance of payments deficit. Normally, repayment – and the defense expenditures financed with it – would have been evenly distributed through several years, but since we do not adjust the balance of payments with such fluctuation, we consistently did not modify the deficit, either. This fluctuating expenditure is adjusted in the course of calculating the broader underlying deficit (see clause 4.2.2.).

If we take into account the financing requirement due to losses and investment of certain companies in the continuous adjustment of the budget deficit (and indirect debt), then consistently with the above, there is no need for recording in the deficit when the debt of the public companies are converted into public debt (debt assumption, capital transfer).

c. Outsourcing of public investments into PPPs

More detailed analysis of investment activity is all the more important, as the accumulation of certain fixed assets without private secondary markets is formally recorded in the corporate sector. With regard to the PPP form, the government assumes a long-term obligation vis-à-vis the private investor to continuously finance amortisation, interest and operating costs.

It may be problematic that the 'non-market' nature of an asset is not always easy to recognise. In connection with motorway construction (M1 and M5), for example, an attempt was made in the mid-1990s by the government to transfer the construction of the network to the market sector, similarly to the telecommunications sector. The attempt failed, because it became evident that the investments would not be recovered with the fees collected from the users, and thus substantial government funds were required.[25] After 2000, development of the highway network was carried out by state-owned companies (NA Zrt. and ÁAK Zrt.). This method was inappropriate for outsourcing road construction, and therefore PPP contracts concluded with private companies (M6, M8) were gradually introduced.

---

[24] In relation to administrative price regulation (e.g. natural gas), these are not exclusively state companies, but partly or fully privately-owned companies as well, such as MOL Nyrt. If the decrease in dividend covers household subsidies, it may be recorded as a gross figure as quasi-fiscal transfer and quasi-fiscal tax.

[25] The government repurchased the M1 motorway; the related repayment of the state-guaranteed credit is recorded in the accounts of Állami Autópá-lya Kezelő (ÁAK) Zrt. The Alföldi Koncessziós Autópálya Zrt. requested a very high rate of compensation from the government for the purpose of ensuring the profitability of the M5 motorway in its concession. With a view to rationalising fees and progressing with the construction of the M5 motorway, in 2004 ÁAK purchased a 40% share package and an option for the outstanding stake. It sold the above in 2008.

In the case of cultural investments as well, attempts were made to involve public companies, and then use the PPP form (2002–2004, Millennium City Centre Cultural Block, currently the Palace of Arts). Construction of the Budapest Arena was implemented using a similar PPP form (2001–2004). These investments were subsequently classified among ESA government investments.

Between 2003 and September 2009, an inter-ministerial committee, including a representative of the Central Statistical Office, provided advice on PPP schemes. Thereafter, many PPP programs were launched, e.g. prison construction (2005–2008), student boarding house construction and reconstruction (2005–2009), construction of gymnasiums and swimming-pools for schools (2005–2008), implementation of the uniform digital radio communications system compliant with Schengen requirements (2006–2007). These investments are deemed to be private investments on the basis of a statistical criterion assessing three types of risks.

As noted above, in relation to economic classification, what matters is whether a fixed asset specifically serves the specific purposes of general government ('specified for public purpose') and if there is a private market for it, i.e. is it easy to sell if necessary. On the basis of these criteria, we augmented general government investments with the aforementioned investments. Consistently, we deducted from the future availability fee the estimated amortisation payments of the underlying debt. (Thus, cover for interest and operating costs remained among expenditures.)

The purchase of the *Gripen* fighter jets constitutes a special case, considered identically by the statistical and economic approach. In the cash flow recording, the purchase and the related training service appeared as a payment of a ten-year lease fee. According to the decision of Eurostat relating to the purchase of military equipment, it must be recorded as statistical expenditure in the years of delivery (in 2006–2007), the fee paid in the years preceding delivery must be reclassified as advance payment (financing), and in the period following receipt, a portion of the lease fee must be excluded as repayment (financing) from current expenditures. We adjust this fluctuating expenditure in the course of calculating the broader *underlying* deficit (clause 4.2.2.).

d. Provision of government subsidy in the form of 'financing'

The issue of the delineation of sectors discussed under section b partly overlaps – via the financing solutions of companies to be reclassified – with the next major group of adjustments, the reclassification of below-the-line items (financial transactions) and above-the-line items (affecting the deficit).

Government controlled 'financing' can have two sources. As one possibility, general government itself provides a loan or guarantee (see clause 2.2.2). Another possibility is that such activity is conducted by state owned organisations, holdings or private institutions with government funding. The analysis of state-owned organisations is relevant insofar as they can accumulate higher debt and sell financial assets (privatisation). International experience shows that the performance of quasi-fiscal activities is quite common in this group. These activities include the financing of the losses and investments of the public companies noted in the above section.

In Hungary, the privatisation organisation (ÁPV Zrt.) was included in the government sector from a statistical point of view as well, although some of its activity is only recorded below the line (i.e. as a financing item) as investment, shareholder loan or a guarantee. Recurring reorganisation expenditures and guarantees granted to loss-making companies (Malév, power plants), however, imply that often this was rather subsidy provided to public companies.

It is also necessary to augment the deficit with the estimated loss of MFB Zrt. (Hungarian Development Bank), due to its financing of government controlled activity. The reorganisation role of the MFB was limited to a couple of events in the 1990s (capital increase of Postabank, buy-out of Konzumbank). The MFB expanded its quasi-fiscal activity from 2001. In its accounts, it separated the profit/loss on 'strategic' (government) responsibilities and transactions conducted at its own risk. In 2001, 'strategic' activity accounted for 70% of total activity, falling to a minimal level again after 2003. In the framework of such activity, it was necessary to individually examine amounts spent on the reorganisation of public companies to determine whether the MFB acquired financial assets or not.

Due to the valuation problems, however, it is difficult to determine to what extent the government or public holding acquired financial assets in relation to government controlled lending and financial 'investments'. If it did not acquire assets – e.g. in connection with road construction and the financing of sports in the past – then the given expenditure should be included in the deficit. On the other hand, the valuation methods by accountants may be adopted and our own estimates can be prepared to determine the portion of preferential lending activity (e.g. agricultural lending) which probably represents a subsidy to the borrower and simultaneously a loss for the lender. An official estimate was prepared to determine the amount of assets acquired by the two companies of the MFB in the course of the purchase of the external shares in cooperatives, and the amount of subsidy received by the sellers as the portion of the purchase price not covered by the value of the assets.[26] The MFB acquired assets if reorganisation was performed prior to privatisation, but did not acquire these if reorganisation was before liquidation (e.g. examples of both cases in relation to the canning plants). The government guaranteed loans of students in higher education are more closely linked to actual financing costs because their interest was regulated by a government decree to ensure cover for operating costs in addition to the cost of funds, and for risks resulting from default on repayment.[27]

The position of the MNB – assuming the role of the monetary authority – was also unique in past decades. Firstly, until 1990 the central bank refinanced the quasi-fiscal investments (Jamburg, Bős–Nagymaros) and subsidy (loan capital, government loans) financed by the National Institute for Development (ÁFI), the predecessor of the MFB. These financing items were assumed by the general government in 1990. Another particular aspect was that, until 1990, contrary to international practice, the MNB was in charge of most of the foreign exchange financing of the government on its own behalf and kept this debt in its balance sheet. Its profit and loss account only contained transactions prior to 1997; the 'zero debt' in the balance sheet, with no maturity, automatically provided by the government, served to cover the effect of foreign exchange devaluation. (The consequence of the above was incorrectly qualified as a quasi-fiscal deficit by Markiewicz, 2001.) In 1997, in the course of the so-called 'debt swap', the government covered the foreign exchange debt with government bonds linked to similar conditions, and converted zero interest debt to foreign exchange debt provided to government. From 1997, however, the central bank profit payment was distorted by the fact that the net appreciation of assets was included, which should not be deemed as revenue, yet it nevertheless partly offset the loss incurred on the transactions. We therefore adjusted our augmented indicators for this impact. This distortion was eliminated from 2003, when the budget act was amended. Since then the profit of the MNB resulting from transactions must be considered in the budget balance, regardless of the sign, while similarly to transactions conducted on revaluation reserves, revaluation included in the profit only qualifies as financing. In practice, the profit of the MNB is recorded in the deficit with a one-year delay in the form of dividend payment or reimbursement of losses. Our augmented indicator, however, makes this adjustment in the given year already.

The government can also support lending activity in the private sector by providing preferential terms, for example, to promote housing construction. While the budget can thus increase household investments in a given period, the interest subsidy arising as expenditure is distributed over the entire lending period. Such distributed expenditure, similarly to the filtering of PPPs, could in theory be 'capitalised' at the beginning of the period, but it is difficult to estimate the extent to which the interest subsidy increased home investments (Hornok et al., 2008) and to what extent it was a 'windfall gain'.[28]

e. Distortion of cash flow recording

In the following, we discuss the issue of cash flow recording adjustments which were excluded from the previous sections, and thus we do not elaborate on the issue of capital transfers subsequently financing quasi-fiscal losses or the repayment of loans drawn in the form of a PPP. In this case, we focus on the analysis of the flow of funds. Accordingly, above-the-line general government expenditure (or revenue) is recorded on the date on which it is deemed as revenue (or expenditure)

---

[26] Pursuant to a government decision, the purchase price in 2001 corresponded to the 1992 nominal value of the external shares. This price may seem low, but in reality, in cases where the cooperatives operated well, and the purchase price is actually low, the cooperatives were able exercise their option right. Moreover, in 2002, the purchase was expanded to also cover cooperatives under bankruptcy or liquidation.

[27] Such risks are lower compared to market conditions, as the decree authorised the tax authority to collect the debt. Since, however, between 2001 and 2003, risks and operational costs were not covered, the difference between the market and preferential rate should be recorded as subsidy.

[28] The sizeable cuts in home construction subsidy exercised a minor impact on home construction; the volume of HUF loans declined, but foreign exchange loans increased.

in relation to the *behaviour of the beneficiary*. This does not necessarily correspond to the date on which the statistics record it as expenditure (or revenue).

1. Diversion of the timing of certain current corporate subsidy and price subsidies from the usual schedule may seemingly produce savings, the impact of which must be readjusted in the deficit.[29]

2. In relation to the temporary advancement or delay of the VAT refund, the result of this in the budget balance does not matter; what matters is whether this impacts the behaviour of the beneficiary, or is it simply deemed to be the provision or receipt of a short-term credit.[30]

3. In accordance with accrual-based statistics, it is appropriate to adjust cash flow interest expenditures and interest revenues for accrued interest. Fluctuations in cash flow expenditures may result, for example, from the fact that the share of short-term T-bills changes, and this is readjusted by accrued interest.

4. By contrast, we do not adjust cash flow figures if the recipients are households – e.g. the one-month delay in payment of the 13th month wage – because it is uncertain as to how this affects the behaviour of households. We analyse the fiscal impulse affecting the disposable income of households in the cash flow approach in order to clearly identify the impact (size of the 'shock') arising in the first round. We could also apply accrual-based 'smoothing', but we would then have to adjust each one-off item, as well. Such *ad-hoc* adjustments would basically imply what we should theoretically expect from the behaviour of households, namely, that these do not react to the timing of cash flow spending and temporary items as to regular income. By contrast, the empirical question arises as to what proportion of households reacts in this way and how many behave in a short-sighted/liquidity constraining manner.[31] It is more appropriate to manage this in a model which relies on raw cash flow figures as a basis (for the purpose of quantifying the impact in the first round).

5. The issue of advance payments and prefinancing renders the use of cash flow data more complex. For example, the amount corresponding to half of agricultural subsidies provided in 2005 could already be used by the beneficiaries in 2004. The banks, namely, could provide prefinancing in the form of factoring, on the basis of the funding document. Thus, the subsidy was already partly in effect in 2004 in relation to the beneficiaries. The pharmaceutical subsidy expenditure of the social security authorities in 1998 is an opposite example, as the cash flow-based expenditure was subsequently increased in the annual accounts with the pharmaceutical advance of December (GDP 0.1%). The recording therefore became asymmetrical; the advance provided for 1998 at the end of 1997 was charged to 1998, similarly to the advance provided for 1999 at the end of 1998. For the purpose of adjusting this, we applied the cash flow expenditure as a basis against the expenditure recorded in the annual accounts.

6. In 2003–2004, neither the cash flow-based nor the accrual-based expenditures included amounts only subsequently paid by the general government to companies constructing the highway network.[32] For the purpose of filtering out this distortion, by proportioning the total investment expenditure, we prepared an estimate on the amount of deferred payment relating to the specific construction stages.

---

[29] The adjustment is not necessary if the given company is also taken into account in relation to the quasi-fiscal adjustment, as in this case, its larger cash deficit is automatically recorded.

[30] The practical relevance of the above is that the tax authority plays an active role in the timing of the refund within the statutory deadlines. In the past, this particularly caused a difference in the cash flow pattern at the end of the year. Owing to the fact that in the past, the Hungarian application of the ESA methodology chose so-called time adjusted (delayed by one or two months) cash flow figures as accrual based accounting, it was necessary to modify the ESA deficit by the schedule, as well. A delay of several days or weeks obviously did not affect the investment decisions of companies, but this holds less true in relation to a delay of several months. For simplification purposes, we judged that the delay of the refund impacted corporate decisions only to a negligible degree.

[31] For example, the one-month delay of the 13th month wage could not have had any impact on the consumption of households which held deposits or accessed loans. In households, however, where such financing was not available, consumption remained limited and increased only in the subsequent month.

[32] The budget act of 2003 enabled the given ministry (Ministry of Economy and Transport) to commit itself to paying HUF 120 billion in 2004 under this title and HUF 80 billion in 2005. In relation to part of the road construction, invoices were only issued later, and thus these amounts could not be recorded under accrual based accounting.

7. We adjusted budgetary cash flow expenditures by the nearly HUF 60 billion paid to the deposit account at the end of 2000, by taking account of expenditures when the expenditures were spent in the subsequent years from the deposit account. We similarly adjusted expenditures by the HUF 26 billion transferred at the end of 2002 to the foundation account which was paid as compensation in the course of 2003.[33]

8. It is important to also augment cash flow expenditures with expenditures effected via providing financial assets. This was the case in the 1990s, such as the household transfer implemented in the form of providing compensation notes. The value of the compensation note, however, cannot be determined, as it concurrently had various prices, depending on the form of use.

9. The cash-flow expenditure should be augmented with the change in the stock of unpaid (overdue) bills, if data is available. For example delaying payments for the purchase of goods and services increased the stock of unpaid bills by 0.2% of GDP in 2009, which may have increased the stock of overdue bills as well.

10. The excise tax on tobacco can fluctuate because of high tax increases, which could make profitable the accelerated purchase of tax stamp for the distributor companies, who could then use these stamps over a longer period. The accelerated purchase was seen as financing and therefore this was excluded from the cash-flow revenue. This resulted in shifts between 2009 and 2010, and between 2010 and 2011.

2.2.4 Adjustment for the effect of pension reform

For the purpose of calculating the augmented deficit, the official budget revenues need to be adjusted for the effect of pension reform (see explanation under clause 2.1.1/C). As a result of the pension reform, from 1998, those switching to a fully-funded private pension scheme pay a portion of their contributions into private funds instead of to the social security authorities. We have reliable data available in relation to the above amount on the basis of the accounts of the private funds. As a control calculation, we can use the partial contribution payment still paid by the private fund members to social security, as it is proportional to the contribution paid to the private fund on the basis of the contribution rates. This adjustment makes a difference between the augmented deficit and the augmented financing requirement. The augmented financing requirement, indicating changes in net financial assets, need not be adjusted for the impact of pension reform.

2.2.5 Further adjustments to cash flow

Beyond the adjustment for the impact of the pension reform, as an additional difference between the augmented deficit and the augmented financing requirement, adjustments to cash flow figures may also vary as a result of the different scope of these indicators. The augmented deficit, indicating flow of funds, is based on an adjusted cash flow approach. By contrast, the augmented financing requirement is defined on the basis of changes in the adjusted net financial assets which, in principle, is consistent with the accrual-based accounts. Due to the practical problems linked to applying the accrual-based approach (e.g. personal income tax refunds, omission of the adjustment of certain advance payments), however, we are currently applying the adjustments performed for the augmented deficit (see clause 2.2.3/e) in relation to the augmented financing requirement, as well. We apply adjustment for the impact of accrued corporate losses on cash flow tax revenue only at a later stage, during the cyclical adjustment.

As noted under clause 2.1.1/D, carry forward losses may distort the amount of the augmented financing requirement. This is attributed to the fact that in most countries (as in Hungary) corporate taxation is asymmetrical. This means that the profitable part of companies pay corporate tax, while loss-making companies do not receive a transfer corresponding to 'negative tax', but may reduce their tax payment obligations in the subsequent years by accruing the losses. This is partly conditional, as many companies have since been terminated; moreover, carry-forward in the past could only be applied for a certain period of time.

---

[33] The National Institute for Development (ÁFI) assumed a similar role of 'paying agent' until 1996. Since it generally paid on less than the amounts received from general government, it transferred the residual amount in 1996 to the budget, and the deficit was thus adjusted.

In relation to the quantification of this impact, it is a major valuation problem that, firstly, this is a negative tax base, and thus future tax rate changes affect the amount of negative tax. Secondly, due to the conditionality, it is difficult to estimate the actual amount of the taxpayer's receivable reducing the future tax payment obligation (tax base). As a simple approach, an average calculation from the whole of a period may be applied which indicates the amount of loss made in the given years reducing the tax base and carried forward to the subsequent years. On the basis of the above, the newly arising loss can be divided into a presumably lost and a presumably effective financial claim. The latter may be calculated using the actual tax rate as negative tax, while in parallel, the impact of the tax base reduction in the given years can be filtered (P. Kiss et al., 2009).

In the approach examining the change in the augmented net financial wealth (augmented financing requirement), adjustment for the negative tax and its deferred 'repayment' would be justified if the amount was not uncertain.[34] It is another issue as to whether this bears an economic impact; in other words, in addition to the augmented financing requirement, is it necessary to also adjust the augmented deficit? Adjustment is not required if the loss-making companies are subject to liquidity constraints, i.e. it is relevant when they can enforce their receivables against the state on a cash flow basis. However, if the loss is of a temporary nature and linked to a new company's investments, start-up of production, the date of cash payment has no economic impact. Since we assumed that the weight of this kind of loss is smaller, we disregarded the economic impact of financial claims arising in relation to the carry forward losses, i.e. we did not adjust the augmented deficit for the 'negative tax'.

---

[34] According to the data, 53% of cumulated carry-forward losses disappeared, this part is excluded from either the existing stock in 2006 and the amounts effectively used by the companies (P. Kiss et al., 2009). Recent data shows that the lost part has increased to 67% of the total (P. Kiss and Reppa, 2010).

3   The fiscal impulse

The indicator of the fiscal impulse seeks to capture the size of the 'impact' delivered by the government to the economy *(fiscal impulse,* IMF)[x]. By contrast, the fiscal (or demand) impact indicates the actual size of the impact *on the economy* generated by this impulse *(fiscal impact).* Although the actual impact on the economy is difficult to quantify, identification of the fiscal impulse represents an important intermediate step in this process. In the course of determining the impulse, it is therefore also necessary to consider the issue of the potential economic impact. We discuss these correlations below.

3.1 STRUCTURE OF THE IMPULSE IS RELEVANT IN RELATION TO THE ECONOMIC IMPACT

There are complex interactions between economic trends and the various fiscal revenues and expenditures, and therefore it is extremely difficult to estimate the economic impact.[35] The CBO and IMF emphasise that changes (impulse) in any adjusted balance indicator can only inaccurately identify the economic impact, as it is determined by the labour demand and supply, consumption and investment decisions of economic agents, also reflecting their expectations.[xi] Empirical evidence shows that changes in the various balance indicators – as intermediate impulse indicators – are inappropriate for approximating the economic impact, although the indicators adjusting for the effect of the economic cycle may sometimes provide a better estimate compared to the total deficit (Krogstrup, 2002). The fiscal impact is determined by the *development of the revenue-expenditure structure,* as the change in the structure has economic impacts on growth and inflation through the varying effects of the different expenditures and tax types, even if the change of a balance type indicator identifies the fiscal impulse as unchanged.[36] From the point of view of the budget balance, a tax cut can be offset by a cut in investment expenditures of the same amount, but their impact on aggregate demand will not be equal, because the purchase of fixed assets has a direct impact on aggregate demand. By contrast, a tax cut only has an indirect effect on consumption, and hence it does not automatically increase demand at the same rate.

According to the IMF, the change in the deficit can be identified with the impulse *arising in the first round,* modifying the disposable income of economic agents.[xii] The fiscal impulse calculated as the change in the balance, however, only provides approximate information relating to the 'shock'; generally speaking, it is a good appropriate approach only if the structure changes more or less proportionately.[37] There are cases, however, where a relative stable balance masks substantial shifts in structure, e.g. in 2003, when the significant loosening of fiscal policy toward household incomes curbed government investments. The simulation performed with the NEM models of the MNB indicate that the various revenue and expenditure measures result in very different inflationary and multiplier effects, i.e. the composition of the impulse is extremely important (Horváth et al., 2006).

On the basis of the classification applied by Horváth et al. (2006), fiscal shocks may be classified into four groups, optionally supplemented with a fifth one.

1. The impulse effected toward households is often the most important one, impacting aggregate demand through changes in the disposable income of households; therefore, it should be highlighted (possibly indicated in brackets). This impulse

---

[35] Firstly, in addition to the impact on demand, a supply impact may also be present (Pete and Szilágyi, 2006). Secondly, a difference may be established between the so-called *impact effect* of fiscal policy and its final effect (Blanchard, 1990). The former is the impact of fiscal policy with given income, interest and exchange rate, while the latter also takes into account the general equilibrium adjustment of the variables. (An expenditure shock may impact output without affecting the interest rate or the exchange rate, or vice-versa, depending on the labour market, monetary policy reactions, exchange rate system.)

[36] On the substantially different inflationary impact of the various items (e.g. indirect taxes), see Henry et al. (2004) and Horváth et al. (2006).

[37] See P. Kiss, 2002b, 2003a, 2003b.

equals the changes in the sum of government wages and cash transfers, less the amount of personal income tax and contributions. For sake of simplicity, it may also include the household capital transfer (home construction). Of course, this impulse, too, allows interpretation only in the necessary detail, as the impact may vary from the change in transfers (impact on income), the decrease in income taxes and contributions and the fall in government wages through reduction in public employment (income and labour market impact).

2. The indirect taxes (VAT, excise duties) paid by the private sector, price subsidies, changes in the sales of government services, price regulation (administrative prices) are classified in the key group of fiscal shocks from the point of view of the central bank; these have a direct impact on prices.

3. Shocks in government purchases and investments are a kind of shocks affecting the product market. This, however, needs to be reduced with revenue deriving from the sale of real assets and the VAT content of such expenditures.

4. If shocks on the supply side of the economy are defined in a narrow sense, it can be restricted to the corporate impulse, which is defined as the difference between corporate subsidies and income tax. But as indicated under clause 2.2.3.b, this category includes subsidies provided to public companies, augmented with the financing requirement covered with indebtedness (operating deficit and investment). If the deficit is not augmented in a net sense in relation to these companies, but considered on a gross basis, sales revenue arises and purchase of goods and services and wage expenditures in excess of the sales, i.e. the household channel can be further clarified if additional information is available.

5. The balance of foreign transfers affects the balance of payments. This category essentially covers the balance of current and capital transfers received from the EU and payments made to the EU.

On the whole, we can conclude that in addition to the aggregate fiscal impulse, it is necessary to reveal the impact of certain channels developing very differently from the aggregate impact, such as that of the household channel or the impact of government purchases directly affecting the aggregate demand of the total economy.

3.2 ITEMS WITH INSIGNIFICANT IMPACT SHOULD BE EXCLUDED FROM THE IMPULSE

We emphasised earlier that the objective of our deficit adjustments is to capture the first round fiscal impulse. Up to now, for the sake of simplicity, this indicator was called the demand impact. To be more accurate, we will now draw a distinction between the fiscal impulse arising in the first round and its impact produced on aggregate demand in the total economy.

Some of the temporary effects on the budget balance are related to the economic cycle, while others are related to the impact of other – non-cyclical – factors (e.g. measures, inflation). In relation to determining the impulse, it is necessary to decide whether or not these temporary factors have significant economic impacts. Because if there is no such impact, it would be appropriate to exclude these items from the impulse. As discussed in chapter 2, this is what we attempted to do when determining the augmented deficit, as the alternative indicator of the CBO is also based on a similar adjustment. Both methods focus on determining whether the given item has a significant impact on the behaviour of economic agents, their investment and consumption decisions, and not whether it affects the net wealth of general government. In accordance with this criterion, fluctuations of tax revenue from capital incomes, changes in the net interest expenditure of general government compensating inflation, the impact of the timing of revenues and expenditures, the distribution of government investments in the form of PPPs and the subsequent reimbursement of the losses of state companies may be classified as temporary items.[xiii] As noted above, these factors are not commonly adjusted in the recording of national accounts, e.g. many companies conducting quasi-fiscal operations and PPP investments are included in the corporate sector. Therefore, the simulations focusing on fiscal shocks (Horváth et al., 2006; Hornok et al., 2008) and analyses concentrating on the private sector (Gál, 2007; Munkácsi, 2009) examine data adjusted by the MNB.

Deciding which item has a significant impact also depends on the relation assumed between income and consumption (see Box 3). If we assume, for example, that economic agents are not subject to liquidity constraints and they have foresight

of two-three years ahead, the method of moving averages may be applied for the purpose of filtering out temporary items (Blanchard, 1990). Beyond these strong assumptions, the practical difficulty underlying this method is properly forecasting revenues and expenditures 2-3 years ahead.

In determining the impulse, we primarily adjust for items the impact of which is insignificant. As noted above, for example, a deficit increase resulting from the switch to the fully-funded pension system does not impact demand, although it worsens the net financial wealth of the budget. The IMF maintains that with the exception of certain cases, the reform is assumed to have a neutral effect, i.e. the fiscal impulse needs to be adjusted for the effect.[xiv]

Box 3
How does income affect consumption?

There are several models relating to the assumed impact of income on consumption. According to the simplest assumption, consumption immediately adapts to current disposable income, that is, taxes and transfers have direct impact on household demand (fiscal impulse equals the demand impact). In contrast, the smoothing of consumption may also be assumed on the basis of the lifecycle income or the average of a longer period (fiscal impulse is greater than the demand impact). In extreme cases, the tax cut and the resulting rise in public debt may produce a neutral effect (fiscal impulse with zero demand impact). Firstly, the Ricardian equivalence, deduced from the smoothing of infinitely living agents' consumption, and secondly, the gradual emergence of offsetting (credits and savings) mechanisms assumed on the basis of the heterogeneous income groups of the population, serves as one explanation. (Mankiw, 2001; Hayashi, 1987). In small, open economies, as a result of the integration of heterogeneous income groups into the models, a fiscal shock also modifies relative prices, and a temporary shock, too, may produce a permanent impact on the real exchange rate and the real economy. According to one such model (Matsen et al., 2005), a temporary tax cut may also reduce consumption in the long term, and in parallel, increase demand for domestic products and labor supply. A temporary expenditure would also increase labor supply and domestic output in both the short and longer term. In the short term, the consumption of households with liquidity constraints increases, as opposed to the fall in the consumption of households with higher income (savings), and the resultant of the two impacts is uncertain (Matsen et al., 2005). In these models, however, the impact of the decreasing rate of households with liquidity constraints due to the upward trend in households' credits is neglected.

As suggested above, the assumption was similarly made that inflationary compensation contained in nominal interest rates does not produce an impact. Government creditors qualify this as 'amortisation'. Blanchard (1990) therefore proposed an operational indicator which only contains real interest expenditures. When calculating the indicator, however, he does not adjust for inflation on the given date, but deflates the interest rate level available or forecast for the subsequent years with the expected inflation of the subsequent years. This moving average-based smoothing is useful, for example, in cases where there is high fluctuation in inflation (e.g. surprise inflation). If, however, the fluctuation in inflationary compensation has no impact, the fluctuation in real interest rates is not likely to have one either. If we smooth this with averaging as well, the annual change will remain relatively small. If, however, this impact is not substantial, for simplification purposes, the total interest expenditure may be excluded from the calculation, i.e. it is sufficient to focus on the change in primary balance.

According to a widely applied approach (Commission,[xv] CBO[xvi]), the measurement of the impact on the economy can be restricted to the impact of discretionary measures, that is, the direction of *fiscal policy (demand impact of fiscal policy, fiscal stimulus)*. In this approach, the impact relating to the economic cycle may be excluded from the total impact.

We, however, chose the approach of measuring the impact of fiscal policy through both discretionary policy and automatic stabilisers. The full fiscal impact may be captured with this method, avoiding of typical error in the separation of discretionary policy and automatic stabilisers. We discuss difficulties relating to their separation in the next chapter and the annex.

4 Underlying deficit

On the one hand, adjustment for the temporary effects enables the analysis of the extent to which the permanent component of the fiscal position contributes to the medium-term sustainability of the external balance and the savings and investments in the economy. According to the IMF, it is possible to approximate the medium-term orientation of fiscal policy by excluding temporary impacts affecting the deficit.[xvii] On the other hand, this indicator may serve to assess the distance from the medium-term fiscal objective (MTO). For the purpose of measuring the distance from the MTO, the EU defined the so-called structural deficit by excluding the effects of temporary measures from the cyclically adjusted balance (CAB).[38]

Experience suggests that the structural deficit, in its traditional form, is only suitable for comparison with fiscal objectives (MTO). When calculating the indicator in its common form, namely, the medium-term outlook is possible only to a limited degree (and long-term projection is completely missing). The indicator seeks an answer to the question as to how large the actual deficit would be if the temporary effects were removed; it does so, however, by defining the temporary component from the perspective of past data. In consequence, the facts may significantly modify the underlying fiscal position re-estimated each year.

– Experience suggests that estimation of the budgetary effects of the economic cycle based on continuously updated data may also lead to significant revisions. Trend-based filtering of the cycle can take projections into account, as the fact period is frequently extended with a forecast. It may be subsequently established, however, that in many cases a cyclical upturn is confused with a favourable growth trend, that is, its progress was projected forward (Forni and Momigliano, 2004). In relation to short time series, fiscal expansion may also distort the picture of the growth trend in an upward direction (Hornok et al., 2008).

– The volatile tax revenue on capital income cannot be filtered with cyclical adjustment because cyclical adjustment does not take into account the development of asset prices (Girouard and Price, 2004). The fluctuation in asset prices is difficult to filter with other methods as well, as the equilibrium asset price is unknown and the estimate relying on past data is not necessarily consistent with the current conditions (tax system, investment behaviour) (Eschenbach and Schuknecht, 2002). In the United Kingdom, however, for the purpose of augmenting cyclical adjustment, the Treasury also elaborated a method for the adjustment of asset prices (Farrington et al., 2008).

– Two OECD studies (Girouard and Price, 2004; Koen and van den Noord, 2005) deal with the identification of temporary measures on individual levels (Box 4). Within this category, a distinction was made between measures affecting the net wealth of general government and those not affecting it.[xviii] The latter were qualified as creative accounting.[39]

– A recent OECD study (Joumard et al., 2008) deals not only with the deficit improving effects, as it attempts to filter temporary measures by smoothing the time series of the net capital transfer by applying an aggregated approach. Thus, it not only filters extraordinary items, but these are also distributed by the estimated trend; this is practical, but may

---

[38] The Stability and Growth Pact (SGP) revised in 2005 not only requires adjustment for temporary items in relation to the definition of the MTO, but also in connection to the reduction of the annual deficit to ensure its comparability with the expected (0.5% of GDP) minimum benchmark.

[39] In addition to the OECD, the authors name seven OECD member states which also apply their own adjustments relating to the traditional deficit.

be inaccurate in the absence of specific information.[40] As an additional problem, the filter should also be applied to net investments. Firstly, the impact of PPP-type outsourcing of investment and the sale of real assets is excluded from the filter, and secondly, if capital revenues from the EU are filtered, their use on the investment side should also be filtered. Exclusion of deficit increasing 'temporary' items has also been seen in the Stability and Convergence Reports of some EU countries. However, an argument against removing these from the structural deficit is that some of these items could represent effective economic and social policy measures, and not creative accounting. The structural deficit should not be improved by excluding measures claimed to be one-offs since the aggregate investment always consists of individual projects, depending on the actual preferences. In one year military purchase can be preferred, in other year purchase of trains can be qualified as an outlier.

– A backward looking approach is manifested in the methodological asymmetry that temporary measures are excluded, while at the same time permanent measures with a full-year effect on the following year are not included.

– No estimate is made of the future trend in relation to interest spending; the structural deficit contains actual data which again may significantly change from year to year. In the United Kingdom, a cyclical adjustment of interest expenditure is performed, as the cycle produces an impact on both the financing requirement and yields (Farrington et al., 2008).

– The fluctuation of inflation can not only affect interest expenditure, but also the primary balance. (Buti and van den Noord, 2003, for example, defined the so-called inflation dividend which constitutes the budgetary impact of the 'inflation gap' defined as the difference between fact and the ECB target in relation to countries in the euro area.) Expected inflationary fluctuation has a substantial impact on the primary balance if the government decides, for example, not to compensate for the loss in the real value of expenditures. In the case of surprise inflation, however, the impact of the loss in the real value of expenditures is automatically realised (P. Kiss, 2007b).

– A forward looking approach would also be necessary as the demographic situation in certain countries produces sizeable fiscal impact over the medium term already.

– It may also be necessary to assess the risks (e.g. trends in the global price of the country's natural resources); Barnhill and Kopits (2003) proposed a method for doing so.

There is no indicator which could solve all these problems in international practice. The term structural deficit is usually referred as an indicator which excludes the effects of the economic cycle, one-off measures and special factors (such as natural disasters). The term underlying deficit is employed by the OECD for the indicator which is based on statistical filtering of the time-series (Joumard et al., 2008). Due to the methodological similarities, a recent MNB study used the same term (Hoffmann and P. Kiss, 2010).

---

[40] Although the individual analysis filters capital transactions, it does not distribute the filtered values, and hence, it does not adjust the related current items. Beyond the exclusion of subsequent debt assumptions related to current losses, however, the current subsidy for companies of the previous period needs to be increased with an imputed amount (Momigliano and Rizza, 2007). Similarly, the exclusion of capital revenue received in exchange for the assumption of future payment liabilities also means that this current expenditure should also be adjusted in this future period. Thus, it may be distributed for the appropriate period on the basis of specific information. The aggregated method filters extraordinary values through the HP filter by distributing these with the adjustment of the trend. Obviously, in this aggregated approach, it is not possible to either identify the current items requiring adjustment or the length of the period, and whether the adjustment should be performed backward or forward.

Box 4
Temporary measures in the EU

Koen and van den Noord (2005) provide a partial review of temporary measures observed in the EU-15 group. The Commission also dealt with one-off impacts and prepared estimates for the given EU countries, relating to the period 2000–2004 (European Commission, 2004). Within temporary impacts, a distinction is made between one-off measures and temporary special factors (e.g. natural disasters) beyond the control of government and not related to the economic cycle. The precise definition of 'temporary' effect was not specified beyond the supply of a list of examples; it is left to the analyst to apply to the given case. The disaggregated analytical method of the ECB (Kremer et al., 2006) shows – in relation to six countries – the structural development of general government. This approach is based on the disaggregated cyclical adjustment and the exclusion of the impact of one-off measures. In this case, too, the experts identified the one-off measures. The problem of the volatility of capital revenue – being not fully removed with cyclical adjustment – was only mentioned in the evaluation of the trends.

The MNB did not publish an estimate relating to the level of the underlying deficit until 2010, but it has occasionally indicated changes in the cyclical component.[41] This is partly attributed to the fact that the more common objective of the indicator – comparison with the fiscal targets – was not in the focus of the analysis. Additionally, the medium-term outlook – which bears more relevance for the central bank – can be realised only to a limited degree. (For related theoretical issues, see P. Kiss, 2002a). A simple indicator of the underlying deficit was reported in 2010 in the Analysis of the Convergence Process and in the Report on Inflation. The main practical problems are linked to the distinction between permanent and temporary (cyclical) economic developments and separation of the impact of the cycle and the measures. We will first deal with these problems below. Finally, we will also seek a practical solution to the adjustment of non-cyclical items.

4.1 ADJUSTMENT FOR THE IMPACT OF THE CYCLE

In order to estimate the impact of the cycle, it is first necessary to estimate the cyclical position, and second, the specific impact of the cycle on individual fiscal items. Before discussing these two issues in detail under clauses 'a' and 'b', for simplicity's sake, as a first step, let us assume that all cyclical developments can be described with the output gap (difference between actual and potential GDP), and all relevant fiscal items follow the cyclical developments at the same rate (in other words, they have unit elasticity [E]). This means, for example, that the cyclical position of households' consumption is identical to the output gap, and its fluctuation is perfectly followed by the consumption taxes.

Budgetary items can, in theory, be divided into items *exclusively* (discretionally) defined by fiscal policy – mainly including nominally determined expenditures (G) – and items *jointly* determined by a fiscal parameter (e.g. tax rate) and exogenous trends (e.g. cycle), basically including tax revenues (T).[42] The impact of the cycle on T items can be recognised nominally (in billion HUF), but not in proportion to GDP, as the nominator (T) and the denominator (GDP) change at the same rate. The automatic stabilising impact of fiscal policy constitutes the impact from the other direction, captured in the G items as a ratio to GDP, because in a neutral case, nominal expenditures are annually increased at a constant rate, dampening the effect of the cycle's fluctuation on production and income (see Box 5). Measures beyond the neutral case may be considered fiscal policy of a discretionary nature, offsetting (anti-cyclical) or increasing (pro-cyclical) the effect of the cycle.

In practice, the simplified definition of the stabilising effect of fiscal policy is identified as the cycle's impact on fiscal items. This can be justified to the extent that the two may overlap. The common component is identified if the fiscal items (T) react to the cycle with unit elasticity. If, elasticity differs from one, effects can be recognised not only in nominal

---

[41] The annual reports for the years 1999 and 2000 contain estimates relating to the change in the cyclical component. The estimated levels of the cyclical component were published in 2005 and 2010 in the Reports on Convergence. The Reports on Inflation have included the estimated level of the cyclical component since November 2008.

[42] There can be expenditures as well, such as unemployment benefits and expenditures indexed to certain real variables, such as pensions.

revenue, but also in the revenue-to-GDP ratio (e.g. Farrington et al., 2008).[43] At the same time, this latter effect of the cycle also reflects the automatic stabilising impact of fiscal policy relating to the tax system's progressivity.[44] In other words, the automatic stabiliser effect equals the impact of progressivity (degressivity) on taxes (T items) and the impact of the neutral rate of growth in expenditures (G items) measured as a ratio to GDP.

Box 5
Cyclical effects on the budget vs. stabilizing impact of fiscal policy

The *earlier explicit methods* of cyclical adjustment sought to define the neutral case compared to which active fiscal policy may be interpreted. The key issue to be resolved in this regard is the neutral increase in expenditures exclusively defined by fiscal policy. These earlier methods of cyclical adjustment – comparing actual expenditures and revenues to the neutral case – explicitly identified (p*G) the neutral increase of expenditures (G) (where G does not include unemployment and interest expenditures) with the rate of potential economic growth (p). The impact of the cycle is manifested in revenues (T); given a unit of elasticity, it corresponds to the gap between actual economic growth (g) and potential growth (T*gap, where gap=g–p). In contrast, the stabilizing effect of fiscal policy is realised on the expenditure side (G*gap) because the growth in expenditures remains constant in a neutral case. Instead of explicitly defining neutral expenditure, the *current implicit methods* simply directly adjust the actual deficit with the estimated cyclical component. The calculation of the estimated cyclical component only requires the determination of neutral revenue, which corresponds to the potential rate of economic growth (p*T). The impact of the cycle (T*gap) is in focus; it also serves to identify the stabilizing effect of fiscal policy (G*gap). Obviously, this holds true only if the amount of items defined exclusively by fiscal policy (G) and jointly with the cycle (T) are identical.

4.1.1 The cyclical position – cyclical adjustment of private tax funds in a disaggregate approach

In our earlier example, we assumed that all gaps in the macroeconomic tax bases are identical to the output gap. In reality, the cyclical fluctuation of certain tax bases may be smaller or greater than the fluctuation in GDP. Therefore, the so-called aggregate methods (IMF, OECD, EC) of cyclical adjustment estimate a elasticity between these tax bases and GDP, which captures this average difference.

Empirically, however, we can observe that the rate of cyclical fluctuation not only varies in the average of the period, but from year to year, the 'gaps' of certain macroeconomic tax bases vary from the output gap, even with their sign. As the reason for the above, an output gap in the same size may emerge as the result of a positive wage gap and a negative profit gap, or vice versa, depending on the type of shock. The analysis of shocks is important also for the purpose of distinguishing fiscal shocks from cyclical developments. For this purpose, it is necessary to restrict the tax bases to private tax bases, thereby excluding, for example, government wages. The so-called disaggregated methods were introduced to resolve these problems (Bouthevillain et al., 2001; P. Kiss and Vadas, 2004, 2006, 2007). In addition to the output gap, these methods create estimates for the household consumption, profit, private wage (wage level and employment separately) and unemployment gap. Wages and consumption play a determining role, as these have the largest tax burden (Bouthevillain et al., 2001; P. Kiss, 2002a; P. Kiss and Vadas, 2004, 2005; Boije, 2004; Braconier and Forsfält, 2004).

The disaggregate methods vary as to whether they estimate the gaps of the given variables independently of each other (Bouthevillain et al., 2001), or they connect these (P. Kiss and Vadas, 2004, 2006, 2007). An output gap must be produced for the weighted average of the profit (operating surplus) and wage gaps, and the wage and consumption trends are also correlated, and therefore a connection can be established between these as well.

---

[43] Let us assume that GDP falls by 10%. If there is unit elasticity, the T items will also decrease by 10%, and thus they remain unchanged in ratio to GDP. If elasticity is 1.2%, the T items decrease by 12%, and thus their GDP ratio falls from 40% to 39.2%. The decrease, namely, equals 40*(1.2-1)/100, i.e. 0.8%.

[44] A progressive tax system means that the increase of taxable income is taxed with a higher tax burden (bracket creeping). The automatic stabiliser impact results from such extra burden, i.e. in the event of a boom, the tax-to-GDP ratio increases and decreases if there is a recession.

The output gap and the cyclical gap of the other variables can be estimated in several ways. The output gap is commonly estimated on the basis of the production function. In relation to the other variables, the HP filter approach can solve the separation of the trend and the cycle. The HP filter, however, assumes that the time series contains complete cycles, and thus it does not distort only when this is really the case. Accordingly, for the purpose of preventing distortion, the fact period is extended with a several-year projection period to preferably include complete cycles (Bouthevillain et al., 2001). The problem with this approach is that our cyclical assessment is implicitly included in the forecasting of the cycle. As a possible solution, if the output gap estimated with the production function and the other cyclical gaps are connected with a multi-HP filter, not only is consistency realised, but our assessment of the cycle becomes explicit (P. Kiss and Vadas, 2007). As another option, we rely on the macroeconomic model instead of the HP filters. These models integrate the output gap, but typically do not include the cyclical gaps of the other variables; thus, these have to be estimated in some form. The MNB has been applying this approach since the report on inflation of February 2009. This estimate is based on the trends of variables, which are derived from long-term relationship of a structural macro-econometric model. The cyclical gap of the variables is determined as a percentage (point) difference between their actual and trend values (P. Kiss and Reppa, 2010).

4.1.2 Budgetary impact of the cycle: elasticity between the fiscal and real economic variables

We described above how we can estimate the cyclical gap of macroeconomic variables determining certain fiscal items (T). We discuss below the issue of elasticity for calculating the impact on the fiscal items from these cyclical gaps. To understand the term 'elasticity', however, it is practical to review (Table 2) the approach in which the T items can be decomposed into permanent (column 1) and temporary (column 2) and active and passive components (column 3). The table also indicates that both the trend (1b) and the fluctuation (4c) of government tax bases are deemed to be discretionary; this is consistent with the disaggregated estimation of the cyclical gaps of macro variables restricted to the private segment (P. Kiss and Reppa, 2010).

As noted above, the T items may be defined as the multiple of real economic –permanent (1a) and cyclical (4a) – developments and measures – permanent (3) and temporary (6) – targeting changes in the specific tax burden. There is, however, a 'grey area' between the two, where the real economic trends and the secondary impact (2+5) of measures on the behaviour of taxpayers cannot be clearly distinguished. As suggested above, the decomposition of changes is extremely difficult, and thus the estimation and interpretation of the cycle's (4a) specific impact (the cyclical elasticity of T items) is not simple either.

Permanent elasticity (e.g. of a unit) is the simplest type of cyclical elasticity. The illustration by P. Kiss and Vadas (2006) demonstrated that this is applicable only if the tax (and transfers) system is relatively simple. The illustration also revealed that the application of constant elasticity may be appropriate if we attempt to estimate the impact of measures through cyclical adjustment as residuals, but this is not practical for the purpose of estimating the structural deficit. It was proven with a numerical example that the 'measure' calculating from cyclical adjustment as residuals corresponds to its broadest definition (3 + 6 + 1b + 4d +2b + 5b).

Table 2

Decomposition of T items into underlying and discretionary components

1. Trend in tax and transfers base (economic definition); (1a) private, (1b) government	4. Fluctuation; (4a) due to real cycle of private tax base, due to deflator of private tax base (4b), (4c) government tax base	Non-discretionary component of taxes, transfers (1+4–1b–4c)
2. Indirect (2b) impact of permanent change (2a) and measure on behaviour of taxpayers, recipients of transfers	5. Indirect (5b) impact of cycle (5a) and temporary measures on behaviour of taxpayers, recipients of transfers	Mixed component (reaction to change in trend and cycle, indirect impact of measures) (2+5)
3. Direct impact of permanent measures; (3a) central govt, (3b) local govt	6. Direct impact of temporary measures; given year's (6a) central govt and (6b) local govt, and (6c) built-in progressivity of tax system	Discretionary component of taxes, transfers (3+6+1b+4c)
Underlying component of taxes, transfers (1+2+3)	Temporary component of taxes, transfers (4+5+6)	

One method of estimating elasticity is elasticity estimated on the basis of time series between the tax base and tax revenue. This is not carried out each year, but calculated for a certain period of time. The estimate based on the time series simultaneously reflects the impact of various factors in an implicit form. For example, beyond the cycle and new measures, the change in tax revenue (and transfers) can also result from the changing behaviour of taxpayers (receivers of transfers), changes in tax evasion, and the changing use of tax benefits (optional transfers) (clauses 2 and 5). The change in behaviour is also partly correlated with the reaction to the measures (2b and 5b). Continuous monitoring of the estimation of elasticity is very important, because in practice, the application of estimated elasticity, assumed to be constant in time, can sometimes lead to misleading results. The reason for this is that the real relationship between taxes and tax bases is very complex. For example, the actual tax revenue may be significantly affected by the composition impact within the tax base, resulting from tax regulations (P. Kiss and Vadas, 2006). It is therefore appropriate to separate the impact of the tax systems – their rules and nominally defined elements – from the impact of measures in the given year (6c).

The elasticity recalculated each year from the marginal and effective tax rates of the actual tax schedule is necessary if the tax system (6c) is complex, and there is no automatic annual valorisation of the nominal elements (brackets, ceilings, etc.) (e.g. indexation). Incomplete valorisation is, in fact, active 'deferring' resulting in a higher tax burden due to bracket creeping.[xix]

If, however, asymmetrical solutions, different accounting and statistical definitions exist in the tax system, the unit elasticity assumed between trends in tax and the macroeconomic variable (instead of the legal tax base) may be more appropriate (for more on the related technical difficulties, see P. Kiss and Vadas, 2006). Corporate loss, namely, does not bear an immediate impact on the budget through the asymmetrical treatment of corporate tax; it only reduces payments (tax base) in the subsequent profitable years. Since the aggregate tax base of the corporate sector equals the balance of the profitable part and the loss-making part, the actual annual payment is determined by the current and past shares of losses.[45]

If we disregard the problem of valorisation of nominal items and corporate losses, we may assume unit elasticity between the trends of taxes and the trends of tax bases, if permanent fiscal measures are not implemented (Box 6). For the sake of simplicity, our method also applies this premise. In some specific cases, however, we departed from this (P. Kiss and Reppa, 2010). For the purpose of reducing the aforementioned distortions, we reduce the asymmetry of corporate tax with the adjustment of actual tax revenue (clause 2.1.1/D). In practice, in the course of cyclical adjustment, we calculate from this actual (or adjusted actual) tax, and receive the estimated trend, underlying level of taxes as residuals. Since numerous factors determine the difference between the actual tax revenue and its trend, the cyclically adjusted revenue, received as a residual, needs to be examined to determine the extent to which fluctuation was eliminated by the cyclical adjustment, and whether the remaining changes can be explained with the estimated impact of permanent measures. An indirect method – cyclical adjustment – is unable to substitute the estimation of permanent measures due to the estimation difficulties of elasticities (see Annex).

Box 6
Neutral fiscal policy and progressive tax system?

The *principles* underlying the common methods of cyclical adjustment imply that the government, in a neutral case, keeps the tax burdens constant over the economic cycle; in other words, it valorises the nominal values in line with the average *increase of tax bases during the cycle.* Elasticity in excess of the unit reflects the progressivity incorporated into tax laws which results in a temporarily higher than proportionate tax revenue in relation to temporarily faster growing income, but this is later automatically reversed in the period of the slowdown. (In practice, the estimation of elasticity does not compare to the average of the cycle, but generates a calculation either from the tax laws of the selected year, or the estimation is made on the basis of the longer time series, such data, however, also containing the impact of all past measures, in addition to the cyclical developments.) According to an alternative view (Chand, 1993), the application of built-in progressivity cannot be considered a passive, neutral fiscal policy, but a fiscal policy measure

---

[45] Adjustment through the carry-forward of losses (clause 2.1.1/D) could serve as a solution to manage this asymmetry, which performs the adjustment on the level of the augmented financing requirement, prior to cyclical adjustment.

with an impact on several years. Accordingly, if we do not wish to focus exclusively on the impact of new measures, when estimating the basis of comparison (neutral fiscal policy), it is warranted to assume a unit elasticity between the tax bases and tax revenues. Practical estimates have also been produced to determine the impact of maintaining the progressive (regressive) tax system on developments in revenues, beyond the cyclical effects (Kremer et al., 2006).

4.2 ADJUSTING FOR NON-CYCLICAL, TEMPORARY EFFECTS

The widely applied fiscal indicators of the structural deficit only adjust for the impact of the cycle, but do not deal with the identification and adjustment of other temporary effects.[46] The Commission and two OECD studies also identify this potential shortcoming.

Items with temporary impact can be excluded from the deficit through two different approaches, according to the practice of the MNB (Hoffmann and P. Kiss, 2010):

4.2.1 Narrow adjustment

The traditional adjustment can be carried out in a *backward-looking* way; this method adjusts the deficit through the estimation of the cycle and temporary measures based on past data. Our own method adjusts, from the outset, our augmented indicators with items qualified as creative accounting among temporary measures. The overall effect of these corrections is zero over a longer horizon, since both cyclical effects and creative accounting have a *self-reversing* nature.

It is possible to adjust for the impact of so-called temporary special factors, but we omitted this option for practical reasons. On the one hand, the deficit increased as a consequence of court decisions. On the other hand, extra expenditures arose in connection with natural disasters in most of the years, and therefore only the fluctuation of the above could be considered a temporary impact. Finally, there is regular spending such as the administrative costs of central and local elections, which occur in every four years. In order to keep the adjusted and unadjusted deficit identical for the whole period, a four-year moving average was applied in the course of adjustment for the fluctuation of the effects of court decisions, natural disasters and election costs. The moving average takes into account the actual year and the previous 3 years.

4.2.2 Broad adjustment

As an alternative indicator, broader underlying deficit capturing policy reversals may also be defined taking into account not only the actual year's narrow underlying deficit, but the average underlying deficit of the next three years. (See Box 7 in relation to projections over the longer term, necessary for analyzing debt dynamics.) The underlying levels of deficit, revenue and expenditure remain volatile if narrow adjustments are made. If we do not filter out their fluctuation according to the traditional solution – then the estimation of the underlying deficit will fluctuate each year. As a solution, the affected revenue and expenditure items may be smoothed with the HP filter, by calculation of the moving average, or in an optimal case, on the basis of specific information[47] (P. Kiss, 1998; Joumard et al., 2008).

A possible cause of fluctuation, the actual (not only apparent) postponement of a specific expenditure is recorded in the subsequent year in the same amount as it saved in the current year. This diverts the change in the balance by a double rate from what would have resulted from the permanent developments. Such items may typically include one-off subsidies, investment expenditures and the sale of local governments' real assets. We may observe that the timing of certain items, for example the implementation of local government investments, is substantially determined by the political (election) cycle.[48] Since the length of our political cycle is four years, a four-year moving average can remove this effect.

---

[46] When defining the temporary component, it is always important to clarify what we mean by permanent. As noted above, the structural deficit constitutes a medium-term indicator which does not deal with the impact of longer-term – e.g. demographic – factors. We therefore define the medium-term trends as permanent (see cyclical adjustment).

[47] For example, the announced postponement of an investment, or announced early provision of corporate subsidies, etc.

[48] As a clear tendency in Hungary, local government investments are lower than trend in the first two years of the election cycle and higher than trend in the final two years.

We define the four-year moving average in a forward-looking way, which means that the actual year's figures were extended with the next three year's figures. One advantage of this approach is the inclusion of the full-year effects of those across-the-board measures announced as permanent ones, such as the 50% wage increase in the public sector in 2002, which had a significant full-year effect on 2003. Of course, the length of the moving average (determined by the length of our political cycle) provides information about the policy reversals in this horizon, as this indicator captures the effects of wage cuts in 2003–2005, which partly offset the effect of the initial wage increase. Similar examples can be found in several budget categories (household transfers, taxes, etc.), more details see in Hoffmann and P. Kiss (2010). The broader underlying deficit is not based on the calculation of moving averages of these specific budget categories, but it filters out the fluctuation of the narrow underlying deficit. One can easily examines *ex post* whether some measures were offset later regardless of the fact that they were officially labelled as 'permanent' or 'temporary' measures. But our method requires an extension of data with a three-year projection period. On the basis of these projections recent official statements cannot be judged, as to whether 'temporary' tax increases are really temporary ones, or 'permanent' tax cuts are permanent ones. Although one should explicitly make a judgement on the credibility of these announcements, the effect of this assumption has only a muted effect on the broader underlying deficit because of the technique of the moving averages.

Box 7
Broader underlying deficit and primary balance calculated for debt dynamics

The analysis of the debt dynamics requires a projected primary balance, the trend of the GDP and the forecasting of interest (yields). The projected primary balance corresponds to the broader underlying primary balance, with two exceptions. Firstly, it is not accrual based from a theoretical point of view, either, but cash flow based (adjusted with the impact of one-off measures), as this is consistent with the change in debt. Secondly, it not only forecasts investments three year ahead, but preferably for a longer period, and also examines the extent in which these can be covered with EU funds and the sale of real assets. Compared to the initial position, namely, both the investments and the EU funds and sale of real assets may significantly differ in the medium term. In this regard, it is of secondary relevance as to how much investment appeared immediately in the official deficit in the initial position, and how much with delay (quasi-fiscal investments, PPP). This, nevertheless, effects the balance, since not only installments and interest is payable on the PPP, but the availability fee also covers maintenance costs. In other words, the operating expenditures cannot be saved in relation to the PPP, therefore this expenditure must also be included within the primary balance.

5 Conclusions

The study discusses the alternative, analytical fiscal indicators employed by the MNB. Our methods apply practical criteria; our aim is to define meaningful indicators not only for the fact period, but also over the projection horizon, incorporating all available information. Since we have developed an alternative methodology, subsequent statistical revisions of fiscal data – often correlated with revisions of creative accounting – do not automatically modify our indicators.

Firstly, our approach aims at simplicity, and secondly, at flexible classification based on substantial issues *(substance over form)*. Naturally, our methodology requires continuous innovation, as new forms of creative accounting may appear on the forecasting horizon; therefore it is necessary to review our adjustments from time to time. Application of the analytical methodology and estimations augmenting the available range of information require sufficient expert knowledge.

Two set of information bases may be used at the start. There are ESA statistics and official cash-flow data (linked to the budget act). The principles and level of details of these two recording methods vary. There are various advantages of using cash-flow data as the basis of adjustments, e.g. it is more suitable for measuring the fiscal impulse.

While the cash-flow deficit represents the starting point of adjustments, the underlying deficit – adjusted for temporary effects – serves as the end point of adjustments.

The fiscal impulse, indicating the flow of funds generated between the government and other sectors of the economy, is situated somewhere between the two end points, the cash-flow deficit and the underlying deficit. The change in cash revenue and expenditure reveals the impulse if there are no – creative accounting – operations without a significant economic impact, and *either* surprise measures are taken *or* the economic agents have liquidity constraints (they do not have liquid assets or have no access to credit). Accrual-based accounting is adequate for the estimation of the impulse only if there are *no* liquidity constraints *or* surprise measures in the economy. The augmented deficit is defined by adjusting with the loss of contributions transferred into private pension funds and the impact of creative accounting (PPP outsourcing, quasi-fiscal operations), in addition to the necessary cash-flow adjustments.

According to our current practice for calculating the impulse, only changes in the primary balance are taken into account, but changes in real interest can also be considered as an alternative. The statistics of the MNB contain the so-called operational balance, including the primary balance and real interest combined; this indicator, however, is not comparable with the period prior to 1999, as it should have been calculated for this earlier period in consolidation with the balance sheet of the central bank. It is important to note that the role of the (revenue and expenditure, sectoral) *composition* of the fiscal impulse is more relevant than the change in the balance. Therefore, quasi-fiscal activities should have been taken into account in the gross basis (including sales revenue, wage and purchase of goods and services), instead of taking into account in net terms, as imputed government subsidy.

In addition to the augmented deficit, we also define the indicator of the augmented financing requirement, which corresponds to the change in the balance of the financial assets and liabilities of the augmented general government sector. In this case again, the content of 'augmentation' corresponds to adjustments to the deficit; we take into account, for example, PPP liabilities related to the outsourcing of investments and the debts of certain companies. One difference is that the debts arising as a result of pension reform appear in the augmented financing requirement, and hence the augmented deficit is exceeded by such amount. In principle, the augmented financing requirement should be fully accrual-based, but due to practical problems, for the time being, this indicator only adopts the cash flow adjustments of the augmented deficit.

Chart 2
Various deficit indicators, 1995–2010
(GDP %)
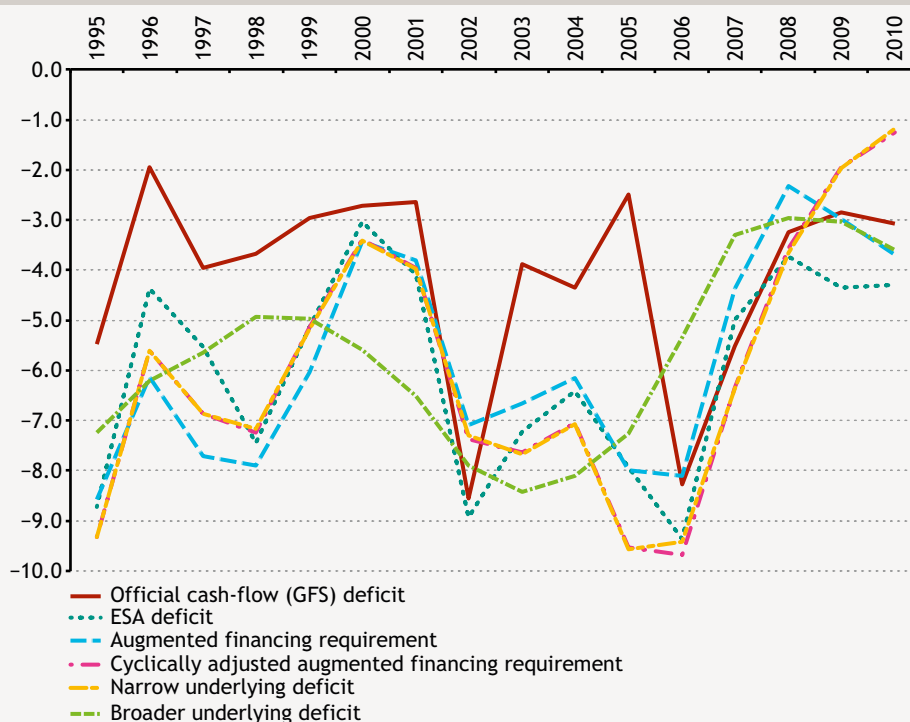
The end points of the adjustments are constituted by the underlying deficit approximating the medium-term fiscal position, in the sense that it removes the impact of all temporary factors. The augmented financing requirement has already been adjusted for the impact of creative accounting, and thus in this final step, it is necessary to adjust for the effects of fluctuations in the economic cycle, inflation, temporary special factors (e.g. natural disasters), and one-off measures not deemed to be creative accounting. For the purpose of ensuring the accuracy of separating trends and fluctuations, we also defined a broader underlying deficit as an alternative indicator. This can smooth the fluctuations with moving averages, but requires the extension of the time series with projections.

The results show a sizeable difference between the official cash-flow deficit and the augmented financing requirement, mostly because of creative accounting. An exception was 2002, when this difference was reversed by the debt assumptions related to quasi-fiscal activities. Further reversal can be seen from 2007, since the deficit increasing corrections due to quasi-fiscal activities were offset with accrual corrections of interest payments, the central bank's profits and losses and spreading over that part of contributions paid to the private pension pillar, which appeared in the budget as lump-sum capital revenue, when the pension reform was reversed.[49]

The ESA deficit can be found between the official cash-flow deficit and the augmented financing requirement, since part of creative accounting (e.g. road construction funded by NA Zrt. and ÁAK Zrt.) was recognised as deficit increasing corrections. Still, the true fiscal situation remained temporarily hidden, due to the fact that these corrections were made at some years later, and partly as lump-sum capital transfer, without spreading over the relevant period.

As the most striking example one can recall when the true fiscal situation was admitted only at the end of 2002. This made it possible to implement sizeable deficit increasing measures from September, with the explanation that this could occur without exceeding the deficit target as the 50-percent wage increase in the government sector, the cut in personal income tax and the increase in household transfers could be all financed from the extra revenues realised in comparison to their

---

[49] We assumed that one-third of the private pillar's members would return to the state pillar in 2011 when we prepared the Report on Inflation in December 2010.

unrealistically low budget plans. The assumption of quasi-fiscal debt (3% of GDP) also made way for arguments during the planning of the 2003 budget which claimed that the deficit could be restored to previous levels, for the one-off debt assumption disappears. Indeed, the deficit decreasing effect of creative accounting was somewhat higher than the average in 2002, but this practice continuously distorts the deficit both before and after 2002. For example, the quasi-fiscal activity of MÁV and BKV was continued from 2003, and part of investments (road constructions) was not recorded either the official cash-flow deficit or in the ESA deficit. Adjustment for creative accounting makes it evident that the augmented financing requirement only improved slightly after 2002.

The difference between the augmented financing requirement and the narrow underlying deficit is basically identical to the budgetary effect of the economic cycle.[50] For example, in 2010 more than half of augmented financing requirement can be explained with the negative effect of the cycle. The difference between the broader and the narrow underlying deficit shows the component which is permanent for the next years. Thus, the broader deficit in 2002 reflects the full-year effect of the measures (50-percent wage increase, etc.) taken in September 2002, which were originally claimed to be permanent. At the same time, the broader deficit in 2002 takes into account the effects of the fiscal adjustment (wage freeze, cuts in investment, etc.) implemented in 2003–2004, although with decreasing weights over time (as a consequence of moving averages). The surprise occurring at the end of 2002 could have been avoided with the indicators we propose, and the permanent impact of the measures of September – without fiscal adjustment – could have been identified. A disadvantage of the broader underlying deficit, however, is that this can be automatically applied for past data, but the application for the recent years requires projections. These results will reflect the extent to which our projections consider recent fiscal expansion or adjustment to be permanent. For example, if the deficit increasing effect of measures taken in September 2002 had been extended for 2003–2005, the moving average would have indicated higher level of the broader underlying deficit in comparison to the average based on actual data in 2002–2005. Similarly, if recent cuts in direct taxes are treated as permanent and sectoral surcharges as temporary measures, we receive higher levels of broader underlying deficit in 2010–2011.

In addition to the alternative methodological solutions, the reliability of these indicators is also determined by the quality of the data sources. As a favourable change in this regard, from 2010, official budget data may contain a substantial amount of information relating to PPP investments.

---

[50] 2006 was an exception, since the effect of temporary special factors – natural disasters, court decisions and administrative costs of elections – resulted in expenditures higher than the average by 0.3% of GDP.

Annex: Direct estimation of the fiscal measure

The direction of fiscal policy indicates the extent in which changes in the deficit are determined by the impact of discretionary measures. The assessment of the room for manoeuvre of fiscal policy in the phase of budgetary planning and the subsequent evaluation of the implementation of objectives require the separation of active and passive effects, irrespective whether these are of a temporary or permanent nature. According to the definition of the OECD, the direction of fiscal policy is also based on the cyclically adjusted deficit, but deducting interest expenditure from it, and takes as a basis the change of this indicator (CAPB) compared to the previous year.[xx]

While the discretionary measure is calculated as a residual through the method filtering the cycle and interest rates, the definition of the Commission suggests that the impact of the various measures can be directly defined.[xxi] The disaggregated analytical method of the ECB attempts to combine the two different approaches, but the unexplained residuals remained considerable in some countries (Kremer et al., 2006). The comparison, however, was only performed on the revenue side. Firstly, the impact of the economic cycle is adjusted, and secondly, the impact of the measures in the given year is deducted; and as further clarification, the estimated impact of the built-in progressivity of the tax system on the revenue trend is also taken into account.

It can be seen that budgetary revenues and expenditures can only be divided into 'mandatory' and 'discretionary' components with substantial simplification. In practice, the definition and quantification of the measure can be difficult.[51] The problems, however, also imply that the adjustment with the cycle and interest is also insufficient for producing a more accurate indicator.

As noted in connection with Table 2, it is practical to consider the measures in net terms (taxes deducted) (3 + 6 + 1b + 4c). The real problem of definition arises on the expenditure side, where it is difficult to determine the neutral case which is used as a benchmark for defining measures. Such a basis for comparison could be a constant expenditure-to-GDP ratio, a multi-year average of spending or a growth rate corresponding to an earlier spending trend. Methods of cyclical adjustment implicitly assume that expenditure increase in line with the potential growth in a neutral case, and this can be seen as an operation of automatic stabilisers.

The projected direction of fiscal policy can be calculated as an alternative indicator. Firstly, this indicator is able to indicate the effect of across-the-board measures on the permanent part of expenditure and revenue (3) earlier (full-year effect is included in the moving averages), and secondly, it is able to smooth out the frequent measures in the volatile part of expenditure and revenue (6) (reflecting their easier reversibility).

This forward looking perspective is also well reconcilable with the narrow definition of fiscal policy, which excludes the estimated impact of the decisions of local governments and budgetary units (1b–4c), as well as conditional items, in relation to which the intentions of the government are not automatically determining, but the development of expenditures or revenues depends on other circumstances, such as application for program-based subsidies (2b, 5b).[52]

---

[51] The activity of the government can be implemented through several – partly substitutable – channels: 1. It determines the supply of non-market production (jointly with the necessary investments). 2. It regulates administrative prices and prices within non-market production. 3. It distributes income through the tax schedule and transfer system, partly covering the costs of non-market production and affects relative prices and consumption with indirect taxes. (Tax measures also affect the expenditures of general government, as calculated by Kremer et. al., 2006). 4. Other regulation (labour market, environmental protection).

[52] The first version of the MNB publication entitled 'Manual on Hungarian Economic Statistics' separated within fiscal demand impact the impact of government activity, as *discretionary measures,* from the impact of so-called *fiscal developments* incorporating the decisions of lower levels of general government and conditional items. Discretionary measures define the expenditure appropriations and parameters of the tax system (tax rates, benefits). These decisions are typically made each year, but expenditure appropriations may also be frozen or increased during the year.

As the simplest method of estimating the combined impact of the decisions of budgetary units (part of 1b–4e) and conditional items (2b, 5b), changes in the annual stock of unused budgetary appropriations are taken as a basis. The impact of the decisions of local governments (other part of 1b–4e) may be captured with the change in the primary balance of this subsector.

This latter indicator should be applied with caution, as a secondary indicator, because in reality it is difficult to make distinction between fully discretionary decisions and the outcome of fiscal policy. The quick accumulation of unused appropriations of budgetary chapters and units in 2001, for example, was caused by the administrative delay of programme-based subsides, which could have been either a surprise or a foreseeable development. The management of chapters and units constitutes the other determining factor of unused appropriations. They have a certain amount of independence, but in this area the government has more – formal or informal – possibility for intervention. Similarly, the behaviour of legally independent local governments is not completely independent from the government. The budget can influence their decision making through the stipulation of a wage increase in the public sector and its incomplete funding with intra-governmental transfers, just as through the occasional provision of financing. (Preferential loans provided by the MFB, or transfer of gas utility shares.)

There are also alternative approaches to the effect that the discretionary measures should be distinguished from the passive behaviour of the government which is more related to the institutional system of the budget. The empirical analysis (Larch and Salto, 2003) suggests that in the four large EU countries, the behaviour qualified as passive – the combined impact of forecast errors and inertia in the implementation phase of the budget – causes the significant difference between the forecast deficit and the fact. It would also be useful to examine the extent in which forecast errors are of a systematic nature, as the stipulation in the budget act of expenditure appropriation based on lower than realistic inflation projection can, for example, serve as a means of adjustment (P. Kiss, 2007b).

References

ALESINA, A. AND R. PEROTTI (1996), 'Budget Deficits and Budget Institutions', *IMF Working Paper,* No. 52.

ALEXANDER, W. E., J. M. DAVIS, L. P. EBRILL AND C.-J. LINDGREN (eds.) (1997), *Systemic Bank Restructuring and Macroeconomic Policy,* Washington D. C., IMF.

BARNHILL, T. M. AND G. KOPITS (2003), 'Assessing Fiscal Sustainability Under Uncertainity', *IMF Working Paper,* No. 79.

BENCZÚR P. (1999), 'A magyar nyugdíjrendszerben rejlő implicit államadósság-állomány változásának becslése', *MNB Füzetek,* 8.

BERNOTH K. AND G. B. WOLFF (2006), 'Fool the markets? Creative accounting, fiscal transparency and sovereign risk premia', *Deutsche Bundesbank Discussion Paper,* No. 19.

BLANCHARD, O . J. (1990), 'Suggestions for a New Set of Fiscal Indicators', *OECD Economics Department Working Papers,* No. 80.

BOIJE, R. (2004), 'The General Government Structural Budget Balance', *Sveriges Riksbank Economic Review,* No. 1.

BOUTHEVILLAIN C., P. COUR-THILMANN, G. VAN DEN DOOL, P. HERNÁNDEZ DE COS, G. LANGENUS, M. MOHR, S. MOMIGLIANO AND M. TUJULA (2001), 'Cyclically Adjusted Budget Balances: An Alternative Approach', *ECB Working Paper Series,* No. 77.

BRACONIER H. AND T. FORSFÄLT (2004), 'A New method for Constructing a Cyclically Adjusted Budget Balance: the Case of Sweden', *Working Paper,* National Institute of Economic Research, Stockholm, April.

BUTI, M. AND P. VAN DEN NOORD (2003), 'Discretionary Fiscal Policy and Elections: the Experience of the Early Years of EMU', *OECD Economics Department Working Papers,* No. 351.

BUTI, M., J. NOGUEIRA MARTINS AND A. TURRINI (2006), 'From Deficits to Debt and Back: Political Incentives under Numerical Fiscal Rules', *CEPR Discussion Paper Series,* No. 5809.

CBO (1989), *Credit Reform: Comparable Budget Costs for Cash and Credit,* Washington, Government Printing Office.

CBO (2002), 'The Standardized Budget and Other Adjusted Budget Measures', *CBO Report,* April.

CHALK, N. A. (2002): 'Structural Balances and All That: Which Indicators to Use in Assessing Fiscal Policy', *IMF Working Paper,* No. 101.

CHANCELLOR OF THE EXCHEQUER (1998), *Economic and Fiscal Strategy Report,* HM Treasury.

CHAND, S. K. (1993), 'Fiscal Impulse Measures and Their Fiscal Impact', in BLEJER, MARIO I. AND ADRIENNE CHEASTY (eds.), *How to Measure the Fiscal Deficit*. Washington, IMF, pp. 85–99.

DAFFLON, B. AND S. ROSSI (1999), 'Public accounting fudges towards EMU: A first empirical survey and some public choice considerations', *Public Choice,* vol. 101 no. 1–2, pp. 59–84.

EASTERLY, W. (1999), 'When is Fiscal Adjustment an Illusion?', *Policy Research Working Paper,* The World Bank, No. 2109.

ESCHENBACH, F. AND L. SCHUKNECHT (2002), 'Asset prices and fiscal balances', *ECB Working Paper Series,* No. 141.

EUROPEAN COMMISSION (2000), 'Public finances in EMU – 2000', *European Economy. Reports and Studies,* No. 3.

EUROPEAN COMMISSION (2004), 'Public finances in EMU – 2004', *European Economy. Reports and Studies,* No. 3.

FARRINGTON, S., J. MCDONAGH, C. COLEBROOK AND A. GURNEY (2008), 'Public finances and the cycle', *Treasury Economic Working Paper,* No. 5, HM Treasury.

FORNI, L. AND S. MOMIGLIANO (2004), 'Cyclical Sensitivity of Fiscal Policies based on Real-time Data', *Temi di discussione,* Banca D'Italia, No. 540.

GÁL, P. (2007), 'Unfavourable investment data – risks to economic growth?', *MNB Bulletin,* June, pp. 12–21.

GIROUARD AND PRICE (2004), 'One-off factors and structural balances', *OECD Economics Department Working Papers,* No. 391.

GRAY, D. F, R. C. MERTON AND Z. BODIE (2007), 'New framework for measuring and managing macrofinancial risk and financial stability', *NBER Working Paper Series,* No. 13607.

HAGEMANN, R. (1999), 'The Stuctural Budget Balance: The IMF's Methodology', in *Indicators of structural budget balances,* Banca D'Italia, pp. 53–70.

HAYASHI, F. (1987), 'Tests for Liquidity Constraints: A Critical Survey and Some New Obsevations', in BEWLEY, T. (ed.), *Advances in Econometrics,* Fifth World Congress, vol. 2, Cambridge, Cambridge University Press.

HENRY, DE COS AND MOMIGLIANO (2004), 'The short-term impact of government budgets on prices, evidence from macroeconometric models', *ECB Working Paper Series,* No. 396.

HOFFMANN, M. AND G. P. KISS (2010), 'From those lying facts to the underlying deficit', *MNB Bulletin,* December, pp. 7–16.

HORNOK, C., Z. M. JAKAB AND G. P. KISS (2008), 'Through a glass darkly: Fiscal expansion and macro-economic developments, 2001-2006', *MNB Bulletin,* April, pp. 6–13.

HORVÁTH, Á., Z. M. JAKAB, G. P. KISS AND B. PÁRKÁNYI (2006), 'Myths and Maths: Macroeconomic Effects of Fiscal Adjustments in Hungary', *MNB Occasional Papers,* No. 52.

INTERNATIONAL MONETARY FUND (1998), *Code of Good Practices in Fiscal Transparency.*

INTERNATIONAL MONETARY FUND (2004), *Public Investment and Fiscal Policy.*

IRWIN, T. (2003), *Accounting for public-private partnerships. How should governments report guarantees and long-term purchase contracts?,* Preliminary draft for comment, The World Bank.

JOUMARD, I., M. MINEGISHI, C. ANDRÉ, C. NICQ AND R. PRICE (2008), 'Accounting for one-off operations when assessing underlying fiscal positions', *OECD Economics Department Working Papers,* No. 642.

KHARAS H. AND D. MISHRA (2005), 'Looking Beyond the Budget Deficit', in SHAH, ANWAR (ed.), *Fiscal Management,* Washington D. C, The World Bank, pp. 151–161, /Public sector governance and accountability series./

KOEN, V. AND P. VAN DEN NOORD (2005), 'Fiscal Gimmickry in Europe: one-of measures and creative accounting', *OECD Economics Department Working Papers,* No. 417.

Kopits G. and J. Craig (1998), 'Transparency in Government Operations', *IMF Occasional Paper,* No. 158.

Kremer, J., C. R. Braz, T. Brosens, G. Langenus, S. Momigliano and M. Spolander (2006), 'A disaggregated framework for the analysis of structural developments in public finances', *ECB Working Paper Series,* No. 579.

Krogstrup, S. (2002), 'Should we pay attention to indicators of fiscal impact on demand?', *HEI Working Paper,* No. 1, (February).

Larch M. and M. Salto (2003), 'Fiscal Rules, inertia and discretionary fiscal policy', *European Economy. Economic Papers,* No. 194, European Commission.

Levin, J. (1993), 'Cash Deficit: Rationale and Limitations', in Blejer, Mario I. and Adrienne Cheasty (eds.), *How to Measure the Fiscal Deficit,* Washington, IMF, pp. 103–112.

Mackenzie, G. A. and P. Stella (1996), 'Quasi-fiscal operations of Public Financial Institutions', *IMF Occasional Paper,* No. 142.

Mackenzie et al. (2001), 'Pension Reform and Fiscal Policy Stance', *IMF Working Paper,* No. 214.

Manessiotis, B. (2007), 'General comments by Basil Manessiotis', in P. Kiss, G. (ed.), *Temporary measures and off-budget activities,* Budapest, MNB, pp. 55–58, /MNB Public Finance Workshop./

Mankiw, N. G. (2000), 'The Savers-Spenders Theory of Fiscal Policy', *NBER Working Paper Series,* No. 7571.

Markiewicz M. (2001), 'Quasi-fiscal operations of central banks in transition economies', *BOFIT Discussion Paper,* No. 2, Bank of Finland.

Matsen, E., T. Sveen and R. Torvik (2005), 'Savers, Spenders and Fiscal Policy in a Small Open Economy', *CESifo Working Paper Series,* No. 1618.

Mihajlek, D. and B. Tissot (2003), 'Fiscal positions in emerging economies: central banks' perpective', in *Fiscal issues and central banking in emerging economies,* pp. 10–37, /BIS Papers, No. 20./

Milesi-Ferretti, G. (2003), 'Good, bad or ugly? On the effects of fiscal rules with creative accounting', *Journal of Public Economics,* vol. 88 no. 1–2, pp. 377–394.

Milesi-Ferretti, G. and Moriyama (2004), 'Fiscal Adjustment in EU Countries: A Balance Sheet Approach', in *Public debt,* Banca d'Italia, pp. 71–95.

Momigliano, S. and P. Rizza (2007), 'Temporary measures in Italy: Buying or losing time?', in P. Kiss, G. (ed.), *Temporary measures and off-budget activities,* Budapest, MNB, pp. 61–71, /MNB Public Finance Workshop./

Monteiro, R. S. (2007), *PPP and Fiscal Risks,* International Seminar on Strenghtening Public Investment and Managing Fiscal Risks from Public-Private Partnerships, (Budapest) (March 7–8, 2007).

Munkácsi, Zs. (2009), 'Who exports in Hungary? Export concentration by corporate size and foreign ownership, and the effect of foreign ownership on export orientation', *MNB Bulletin,* July, pp. 22–33.

OECD, *EO Sources – On policy assumption,*
URL: http://www.oecd.org/document/40/0,2340,en_2825_32066506_1850792_1_1_1_1,00.html.

Orbán G. and Palotai D. (2006), 'Kihívások előtt a magyar nyugdíjrendszer', *MNB-tanulmányok,* 55.

Parker, G. and P. T. Larsen (2005), 'EU states accused of 'hiding' deficits', *Financial Times,* October 5.

Paul, L. and C. Schalck (2007), 'Transfers to the government of public corporation pension liabilities: The French case study', in P. Kiss, G. (ed.), *Temporary measures and off-budget activities,* Budapest, MNB, pp. 72–80, /MNB Public Finance Workshop./

Pete P. and Szilágyi K. (2006), 'A fiskális politika hatásmechanizmusáról. Súrlódásmentes modellek – kínálati hatások', *Közgazdasági Szemle,* 53. évf., február, pp. 97–118.

Philip, R. and J. Janssen (2002), 'Developing an Indicator of Fiscal Stance for New Zealand', in *The Impact of Fiscal Policy,* Banca d'Italia, pp. 187–214.

P. Kiss, G. (1998), 'A költségvetés tervezése és a fiskális átláthatóság problémái', *MNB Füzetek*, 11.

P. Kiss, G. and Gy. Szapáry (2000), 'Fiscal Adjustment in the Transition Process: Hungary, 1990–1999', *Post-Soviet Geography and Economics,* vol. 41 no. 4.

P. Kiss, G. (2002a), 'A fiskális jelzőszámok új megközelítésben', *Közgazdasági Szemle,* 49. évf. 4. sz., pp. 292–319.

P. Kiss, G. (2002b), 'Budget deficit indicators in Hungary', in Ferenczi, B. and Z. M. Jakab (eds.), *Manual to Hungarian economic statistics, electronic document,* Budapest, MNB, URL: http://www.mnb.hu/Root/Dokumentumtar/ENMNB/ Kiadvanyok/mnben_egyebkiad_en/kezikonyv_magyar_gazd_en.pdf.

P. Kiss, G. (2003a), 'Framework of Fiscal Analysis Employed at Magyar Nemzeti Bank', *Focus on Transition,* Oesterreichische Nationalbank, No. 1.

P. Kiss G. (2003b), 'Calculating the fiscal stance at the Magyar Nemzeti Bank', in *Fiscal issues and central banking in emerging economies,* pp. 140–146, /BIS Papers, No. 20./

P. Kiss, G. and G. Vadas (2004), 'Mind the gap – Watch the ways of the cyclical adjustment of the budget balance', *MNB Working Papers,* 7.

P. Kiss, G. and G. Vadas (2005), 'Mind the gap – International Comparison of the cyclical adjustment of the budget', *MNB Working Papers,* 4.

P. Kiss, G. and G. Vadas (2006), 'Fill the gap', in *Fiscal Indicators. Papers presented at the Banca d'Italia workshop held in Perugia, 30 March–1 April,* 2006, Banca d'Italia.

P. Kiss, G. (2007a), 'One-off and off-budget items: an alternative approach', in P. Kiss, G. (ed.), *Temporary measures and off-budget activities,* Budapest, MNB, pp. 18–27, /MNB Public Finance Workshop./

P. Kiss, G. (2007b), 'Kín vagy kincs? Az infláció meglepetés rövid távú hatása az államháztartásra – Magyarország esete', *MNB-tanulmányok,* 61.

P. Kiss, G. and G. Vadas (2007), 'Filling the gap – An international comparisson of the cyclical adjustment of budget balances', *Comparative Economic Studies,* vol. 49. no. 2 (June), pp. 259–284.

P. Kiss, G. (2008), 'Comments on Part Two', in Schwartz, G., A. Corbacho and K. Funke (eds.), *Public Investment and Public-private Partnerships. Addressing Infrastructure Challenges and Managing Fiscal Risks,* Palgrave Macmillan, IMF, pp. 132–135.

P. Kiss, G., T. Jędrzejowicz and J. Jirsákova (2009), 'How to measure tax burden in an internationally comparable way?', *National Bank of Poland Working Paper,* No. 56.

P. Kiss G. and Reppa Z. (2010), 'Quo vadis, deficit? Mekkora lesz az adóbevétel, ha visszafordul a gazdasági ciklus?', *MNB-szemle,* október, pp. 47–56.

Rocha, R. R. and F. Saldanha (1992), 'Fiscal and Quasi-Fiscal Deficit, Nominal and Real. Measurement and Policy Issues', *Policy Research Working Paper Series,* The World Bank, No. 919.

Stella, P. (1993), 'Toward Defining and Measuring the Fiscal Impact of Public Enterprises', in Blejer, Mario I. and Adrienne Cheasty (eds.), *How to Measure the Fiscal Deficit,* Washington, IMF, pp. 279–296.

Tanzi, Blejer and Teijeiro (1993), 'Effects of Inflation on Measurement of Fiscal Deficits: Conventional Versus Operational Measures', in Blejer, Mario I. and Adrienne Cheasty (eds.), *How to Measure the Fiscal Deficit,* Washington, IMF, pp. 175–204.

Wattleworth, M. A. (1993), 'Credit Subsidies in Budgetary Lending: Computation, Effects and Fiscal Implications', in Blejer, Mario I. and Adrienne Cheasty (eds.), *How to Measure the Fiscal Deficit,* Washington, IMF, pp. 147–174.

Williams, D. Z. (1966), 'Reporting loss carryovers in Financial Statements', *The Accounting Review,* vol. 41 no. 2 (April), pp. 226–234.

Notes

i "Net lending (+)/borrowing (–) is a summary measure indicating the extent to which government is either putting financial resources at the disposal of other sectors in economy or utilizing the financial resources generated by other sectors. It may therefore be viewed as an indicator of the financial impact of government activity on the rest of the economy." (Government Finance Statistics, 2002, 4.17.)

ii "European governments are hiring private sector banks to help them disguise the scale of budget deficits…" "They are legal operations, but we cannot consider them to be deficit reducing," Almunia said. In many cases the financial engineering concerned public-private partnerships. (Parker and Larsen, 2005)

iii "Two separate motivations have been given for separating enterprises into the groups identified as public and private, even though enterprises could very well categorized as public for one purpose and private for another. One motivation, based on the behavior of enterprises, is for predicting an economy's reaction to policy changes and external shocks. The second reason, based on the consequences of enterprise operations, is for measuring the distribution of wealth and income within the economy." (Stella, 1993)

iv "Quasi-fiscal operations relating to bank assistance should be included in the augmented balance…Bank assistance operations that have substantially divergent cash and economic impacts should, in principle, be recorded in the fiscal balance when the policy affects the economy." (Alexander et al., 1997)

v Quasi-fiscal activities are defined as "Activities (under the direction of government) of central banks, public institutions, and non-financial public enterprises that are fiscal in character – that is, in principle, they can be duplicated by specific fiscal measures, such as taxes, subsidies or other direct expenditures, even though precise quantification can in some case very difficult. Examples include subsidized bank credit and non-commercial services provided by an enterprise." (IMF, 1998, pp. 76)

vi "This paper proposes nine criteria, falling into four broad categories: managerial independence, relations with government, financial conditions, and governance structure… Requiring that all the criteria be met would minimize the risk of errors in excluding enterprises from coverage, but would probably be too restrictive. Is therefore proposed that all four criteria related to managerial independence and relations with government, plus at least one of the criteria related to each of financial conditions and governance structure, would have to be met for an enterprise to be considered commercially run." (IMF, 2004)

vii "Public sector net borrowing which excludes privatisations and other financial transactions. This is a sensible definition for assessing the fiscal stance. It is consistent with the national accounts, and is the concept used for international comparisons of budget deficits. It is equivalent to what has been called the financial surplus or deficit. Unless otherwise stated, the figures for net borrowing used here cover the whole public sector, whereas the Maastricht deficit criterion relates only to general government and excludes net borrowing by public corporations." (Chancellor of the Exchequer, 1998)

viii "PPPs may be justified on efficiency grounds, but from the perspective adopted here their main feature is that they initially reduce the general government deficit and debt for a given level of investment in publicly-used infrastructure." (Koen and van den Noord, 2005)

ix "Because official credit programs offer more lenient terms to borrowers than are available in the market, or in many cases than those at which the government itself borrows, they contain a pure loan component, reflecting the government's role as a financial intermediary, and a pure grant component, reflecting the government's role as a distributional agent." (Wattleworth, 1993)

x "Fiscal Impulse indicator is used in WEO to assess the annual contribution, whether expansionary, neutral, or contractionary, of budgets to aggregate demand. This indicator is derived from the cyclically neutral budget model." (Hagemann, 1999)

xi "The impact of fiscal policy on aggregate demand hinges on the degree of foresight affecting consumers' decisions…, the size of the effect of the deficit in interest rates and, in turn, the sensitivity of investment to changes in the user cost of capital." (Hagemann, 1999)

xii Model-based approach and fiscal impulse differs: "The principal differences are that the fiscal impulse measure does not include the multiplier a-1, indicating that the effects are first round impacts, and the measure does not weight the revenue component by the propensity to consume." (Chand, 1993)

xiii "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. Three such factors are swings in collections of taxes on capital gains, changes in the inflation component of the government's net interest payments, and temporary legislative changes in the timing of revenues and outlays. (Legislation enacted by the Congress and the President sometimes temporarily shifts the timing of receipts or outlays (usually from the end of one fiscal year to the beginning of the next one). Those small timing shifts are excluded from the standardized budget because they are unlikely to alter significantly the timing of people's plans for investment or consumption.)" (CBO, 2002)

xiv "The increased deficit that results from an individual accounts pension reform in the absence of offsetting fiscal measures is not a reliable indicator of the resulting change to the stance of fiscal policy... The fiscally neutral case, although it is a useful benchmark, it is not likely to apply to any given country. Certain features of an individual accounts reform could either increase or decrease the national saving rate…" (Mackenzie et al., 2001)

xv "Demand impact of fiscal policy. In order to obtain a measure of the effect of fiscal policy on aggregate demand, one needs empirical models in which the interrelationships of various policy measures and economic behaviour are specified." (European Commission, 2000)

xvi "Fiscal stimulus means that fiscal policy is, on balance, adding to the growth of total demand for goods and services, whereas fiscal restraint means that fiscal policy is holding back the growth of demand (for example, by raising taxes or cutting spending). However, no simple measure can fully reflect the impact of fiscal policy on demand."

"Although the cyclically adjusted and standardized surpluses show trends in federal saving, they only partially capture the ways in which fiscal policy affects demand and the economy. Other important influences include fiscal policy's effects on incentives for people to work and save and for businesses to invest."

"Moreover, the adjusted budget measures give only a partial view of the effect of the budget on total demand. Changes in private saving may partly offset changes in government saving if some people think their future tax liabilities are affected by how much the government currently saves. Furthermore, those measures reflect the budget's bottom line rather than its underlying components of spending and revenues, although those components probably affect demand in different ways."

"In addition to those limitations, the cyclically adjusted and standardized surpluses do not take into account the difference between anticipated and unanticipated fiscal stimulus." (CBO, 2002)

xvii "It is therefore considered important to disentangle temporary from permanent influences on the budget balance in order to gauge the medium-term orientation of fiscal policy." (Hagemann, 1999)

xviii "One-off measures: they affect general government net lending or borrowing in a given year or for a few years, but not permanently. Creative accounting operations: they affect the fiscal balance or public debt but not, or far less, government net worth." (Koen and van den Noord, 2005)

xix "The assumption is that a purely passive policy would merely be reflected in the operation of the automatic stabilizers of the budget. It would, of course, be possible to design the automatic stabilizers in such a way that budget responses are more than equiproportionate – for example, if the chosen tax system is progressive, revenue could grow faster than output... rather than adopting the revenue-equivalent approach of having a proportional tax system but introducing new discretionary changes each year..." (Chand, 1993)

xx "In evaluating the stance of fiscal policy it is often useful to correct for interest payments on government debt since these payments are external to fiscal policy. Thus, the primary cyclically-adjusted budget balance is derived by subtracting net debt interest payments from the cyclically-adjusted balance, and changes in the primary cyclically-adjusted balance is used as a rough indicator for discretionary fiscal policy changes. The primary balance is derived from the actual financial balance but with interest paid (and received) excluded, thus excluding the fiscal inheritance i.e. debt built-up in the past. It is primarily used in relation to analysis of debt dynamics." (OECD)

xxi "The fiscal stance measures the direction of fiscal policy by summarising the effects of various discretionary policy actions taken by fiscal authorities. Cuts in government expenditures other than changes in the interest burden, and/or increases in taxes improve the underlying/structural fiscal position and lead to a tightening of fiscal policy... In this report the change in the cyclically adjusted primary balance is chosen as a main indicator on fiscal stance (interest expenditures are not under the direct control of the fiscal authority)." (European Commission, 2000)