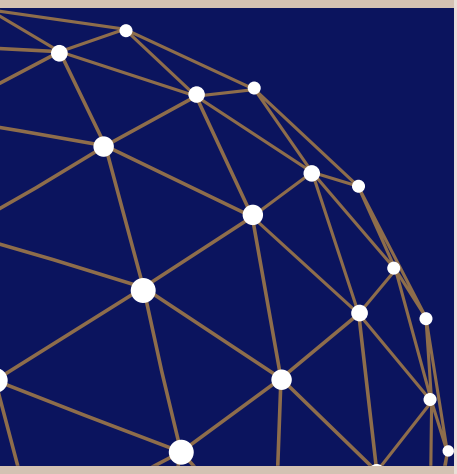

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Fiscal Deficit Indicators

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# 1 Introduction

The budget deficit is one of the most important macroeconomic indicators. It essentially shows the relationship between the income centralised and redistributed by the government (that is, revenues and expenditures). The exact deficit figure can be measured in several ways, and understanding these differences is necessary for the analysis of the underlying factors behind deficit developments. Finally, the deficit should not be examined on its own, but in correlation with macroeconomic developments. This is because economic developments substantially influence the finances of the budget on the one hand, and on the other hand, budget decisions also have an impact on the overall national economy.

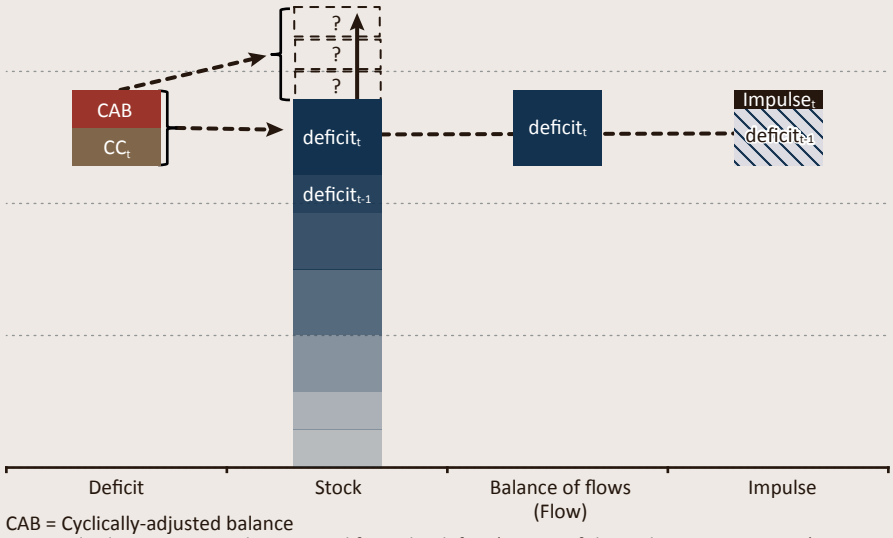
Why are several types of fiscal indicators and approaches needed? Because not all relevant questions can be answered using only one fiscal indicator. As part of this broader range, we hereinafter refer to the indicators defined based on the various statistical and accounting methods as *general indicators*. For example, the Hungarian government budget is planned and implemented based on a cash-based approach, that is, revenues and expenditures are recorded at the time of the cash movement. This relatively simple methodology helps budgetary planning and provides promptly (daily) available statistics. Another advantage of this method is that it has a direct correlation with changes in government debt, because the cash-based deficit must be covered by debt issuance. As opposed to this, the European Union calculates a so-called ESA indicator which is closely related to the statistical system of national accounts. This records the transactions not at the time of payment, but at the time when economic value is produced (for example, if the invoice for an investment is settled several months later, this delay has no effect on the deficit).

In addition to general indicators, analytical indicators are also needed if we want to better understand budgetary developments.

One part of analytical indicators is clearly linked to stock indicators (see first two columns of Chart 1). The government's liabilities at a given yield level can

be regarded as sustainable, if such liabilities do not increase in the long run.[1] The analysis of sustainability requires that we: i) define the trend of exogenous factors (e.g. economic growth), ii) adjust the starting fiscal position in line with the real, underlying situation, and iii) project future fiscal trends. From the perspective of sustainability of the current fiscal policy, the first two points are especially relevant questions since a high deficit does not cause a lasting increase in debt if there are some temporary effects in the background which reversed in a few years' time. Accordingly, for example, on the average of the cycle, the impact of the volatility of tax revenues following the cycle is zero.

**Chart 1**
**Pattern of correlation among the various indicators**




CAB = Cyclically-adjusted balance
CC = Cyclical component to be removed from the deficit (impact of the cycle on tax revenues)

The other part of the analytical deficit indicators focuses on the size of fiscal impulses affecting the economy each year, that is, to what extent does fiscal policy boost or restrain economic growth. This is measured by the annual change in the given deficit indicators (the last column of Chart 1). Another frequently used analytical indicator is the balance net of interest items, the so-called primary balance.

[1] IMF: Assessing Sustainability, approved by Timothy Geithner.

In this Handbook, we discuss the general indicators and the analytical indicators of the government deficit. In the chapter on Hungary, the augmented (SNA) indicator is discussed; this analytical indicator is calculated by the Magyar Nemzeti Bank. The available time series of various indicators are presented for Hungary.

# 2 General indicators

General indicators focus on fundamental issues, such as who performs what activities, in what value and at what point in time. In other words:

- Based on the sector's definition, what units belong within the scope of the general government (who?),
- does recognition take place at the time of cash movement or at the time of the economic event (when?),
- at what value (?) is it settled,
- and does the event belong to the items to be financed (affecting the deficit), or to the items financing the deficit (what does it do?).

The various general indicators provide an answer to the questions above depending on their purpose. The optimal methodology can be deduced from the purpose of the general framework.

## 2.1 Basic definitions, categories

*Cash-based tax revenues:* tax and contribution payments received by the budget at a given date.

*Accrual-based tax revenues:* tax and contributions recorded at the time when a tax liability is generated on the basis of the economic activities during the given period.

*Current and capital transfer revenues:* unrequited payments received by the budget at a given date.

*Proceeds of privatisation:* payments derived from the sales of budget assets at a given point in time.

*Receipts from debt issuance:* funds received by the budget at a given date funded by the increase in government debt.

*Cash-based interest expenditure:* interest expenditure paid by the budget at a given date.

*Accrual-based interest expenditure:* interest liability generated on government debt in the given period.

*Cash-based wage and intermediate consumption expenditure:* wage, goods and service related payments of the budget at a given date.

*Accrual-based wage and intermediate consumption expenditure:* wage, goods and service related liabilities generated by government activity in a given period.

*Current and the capital transfer expenditure:* unrequited expenditure of the budget at a given date.

*Cash-based investment expenditure:* payments of the budget related to public investments at a given date.

*Accrual-based investment expenditure:* public investments implemented in the given period.

*Depreciation:* consumption of public fixed assets in the given period.

*Acquisition of equity:* amount increasing the equity of the budget at a given date.

*Expenditure of debt repayment:* payments made by the budget at a given date parallel to which government debt decreases.

*Creative accounting:* the fictive or temporary improvement of deficit and debt at the expense of a future date. An example for creative accounting was the outsourcing of highway construction to companies outside of the general government in the mid 2000s, but finally this proved to not be in compliance with the EU statistical rules.

## 2.2 Cash-based balance (cash borrowing requirement)

**The cash-based balance is the simplest deficit indicator**. The International Monetary Fund (IMF) encouraged the development of this methodology the most, as member states of the IMF may request assistance (borrow funds) from the IMF in order to retain the solvency of their general government and their national economy. Accordingly, the IMF collected budgetary statistics (GFS86) from its member states until the 2000s, focusing on net government debt and its changes. Correspondingly, the government deficit was defined

so that it was equal to the balance to be financed by the debt. Therefore, the deficit equals the following items:

**Table 1**
**Main revenues and expenditures of the cash-based balance**

| Revenues | Expenditures |
|---|---|
| Cash tax revenues | Cash interest expenditure |
| Current and capital transfer revenues | Cash wage related and intermediate consumption expenditures |
| Proceeds of privatisation | Current and capital transfer expenditures |
| | Cash investment expenditures |
| | Acquisition of equity |

The financing items are identical to the change in net government debt (net of revaluation):

**Table 2**
**Financing items based on the definition of cash-based balance**

| Financing revenues | Financing expenditure |
|---|---|
| Revenues from debt issuance | Expenditure of debt repayment |

**The general government is defined based on legal approach**, therefore those items are considered part of the general government that are classified as such by the country's own legal provisions. This represents very simple and clear sector delineation while ensuring great flexibility for the government.[2] In general, the following items are classified under the general government: central budget, Social Security funds, regional and provincial governments and local governments.

**Expenditure and revenues are recorded on a cash basis, that is, at the time of actual payment**, because only in this way can the deficit be consistent with the change in net government debt (with the exception of revaluation effects). This is so because debt is issued for paying expenditures which are not covered by revenues.

[2] On the one hand, in case of a prudent approach, practically every company can be classified under the legal coverage of the general government making the 'outsourcing' of losses impossible. On the other hand, however, operating – deliberately under-financed – loss-making companies outside of the legal boundaries enables the temporary manipulation of the deficit (temporarily only due to the subsequent recognition of losses).

**In line with the concept of the "change in debt", only transactions implemented in cash can be regarded as expenditures and revenues**, *and therefore the issue of valuation is not present* in this methodology.

**When calculating the cash deficit, every revenue and every expenditure is included, except for the issuance and repayment of debt (as these are financing items).** Privatisation revenues also improve the balance, as government debt may be reduced by selling government assets. In line with this, acquisition of state ownership is also classified as expenditure. By contrast, operations affecting only gross government debt and deposits are not part of revenues and expenditures.

**This is globally one of the most widespread approaches when defining fiscal rules and within government accounting; Hungary uses the same approach to legislate and pass the budget act.** One of the benefits of this indicator is that it is simple, easy to use for liquidity management since the borrowing requirement and the maturing government debt together define the size of new debt issuance (or deposit utilisation). In case of economies under transformation, due to the uncertain evolution of revenues and hard-to-control expenditures, this indicator is able to fulfil the role of a legal (statutory) indicator as actual data is available with a short time lag. Because the institutional coverage covered by the indicator coincided, by definition, with the institutions subject to the law, these can be continuously monitored throughout the year. If mid-year data suggest that achievement of the deficit target may be jeopardised, measures can be taken immediately whenever needed. Even the behaviour of the economic agents is frequently determined by the cash-based approach, because although they know that the budget will pay out a specific amount in the next month instead of in the current month, if they don't have enough liquidity to compensate the late payment, then they must temporarily cut back their consumption. Therefore, the cash-based approach is a good starting point also for assessing the fiscal impulse estimating the economic impact.

**However, the main shortcoming of this indicator is that it is easy to manipulate due to its simple methodology.** The simplest way to do so is by defining a narrow legal coverage for the general government, enabling

them to hide from the statistics some expenditures which, in this case, take place outside of the general government, although in principle they should belong there (quasi-fiscal activity). The cash-based balance can be temporarily improved by delaying expenditures and tax refunds. Cash-based interest expenditures can be decreased by issuing bonds under the face value, thereby realising a temporary interest saving based on the cash-based approach.[3]

## 2.3 Balance corresponding to the System of National Accounts

**The fiscal framework of the European Union applied the fiscal balance corresponding to national accounts (ESA) from the beginning**, and as from 2001 the official methodology of the IMF also switched to the System of National Accounts (GFS2001). The conceptional basis is provided by the System of National Accounts (SNA 2008 and ESA 2010[4]) aimed at producing consistent macroeconomic statistics of the entire national economy.

In the statistical system of national accounts, the general government sector is part of the national economy and the same recording principles apply to it as to the other sectors of the national economy (corporate sectors, households, non-profit institutions aiding households). **The balance of the general government's transactions with other sectors creates net lending or net borrowing for the general government, which corresponds in this system to either a budget surplus or a budget deficit.**

[3] To illustrate the problem, let's take an example where the debt management agency issues a new quantity of an already existing government bond with a ten-year maturity on 30 September, paying interest on 31 March each year (known as a reissue). The cash-based approach takes interest expenditure into account as at the date of actual payment, therefore no interest expenditure is to be claimed in the year of issue, only in March of next year. But upon issuance, six months' interest has already accumulated on the government bond since the previous coupon payment, and the client also pays for this. The statistics takes this into account as interest revenue. Finally, the coupon of the government bonds (the interest paid each year) and the expected return may differ, due to which investors buy the government bond at a different price than the face value and the accumulated interest. If the expected return is higher than the coupon, then the purchase is below face value, and based on the statistics using the cash-based approach, interest expenditure must be recorded at the time of issuance. But if the coupon is higher than the expected return, then investors are willing to pay more than the face value, which implies interest revenue.

[4] REGULATION (EU) No 549/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (21 May 2013) on the European system of national and regional accounts in the European Union. http://eur-lex.europa.eu/legal-content/HU/TXT/ HTML/?uri=CELEX:32013R0549&from=en

Therefore, the deficit equals the following items:

**Table 3**
**Main revenues and expenditures of the ESA balance**

| Revenues | Expenditures |
|---|---|
| Accrual-based tax revenue | Accrual-based interest expenditure |
| Current and capital transfer revenues | Accrual-based wage and intermediate consumption expenditures |
| | Current and capital transfer expenditures |
| | Accrual-based investment expenditures |

With its surplus, the sector finances other sectors (through the purchase of financial assets and decreasing liabilities), while it may finance its deficit through operations of the opposite direction (sales of financial assets or increasing liabilities).

**Table 4**
**Main financing items based on the definition of ESA balance**

| Financing revenues | Financing expenditure |
|---|---|
| Revenues from debt issuance | Expenditure of debt repayment |
| Proceeds of privatisation | Acquisition of assets |

***Some public companies*** **are also included in the statistical definition of the general government sector in addition to the central budget, social security funds as well as regional and local governments**. The coverage of the general government sector is defined not by the country's own legal provisions, but based on the internationally accepted statistical method. This coverage is often broader than what the national laws would determine as general government. The most disputed area is the classification of public companies under the general government or the private sector. The national accounts methodology classifies only those companies – subject to general government control – under the general government sector where less than 50 per cent of expenditures are covered by sales revenues from market activity, meaning that most of their revenues come from government support or they do not have enough revenues.[5] However, the 50 per cent threshold is arbitrary;

[5] In the opposite case, we can talk about an economically significant price. The significant price means that it has a significant impact both on the quantity of goods/services offered by the producer and the demand of customers.

one could argue that a larger sales revenue ratio would be justified. Moreover, when specifically determining the sales revenue ratio, both expenditures and revenues may be distorted.[6]

**Box 1**
**Corporations performing special financial activity**

According to the general rule of the ESA, organisations involved in financial intermediation which are subject to general government control must be classified in the financial corporate sector. The ESA 2010 introduced the category of closed or captive financing financial corporation which is a special purpose entity (SPE) not performing any financial intermediation on the market; instead, it carries out a passive financial function (e.g. a holding company) within a small circle, in general, within one company group. "General government may also set up special purpose units, with characteristics and functions similar to the captive financial institutions and artificial subsidiaries. Such units do not have the power to act independently and are restricted in the range of transactions they can engage in. They do not carry the risks and rewards associated with the assets and liabilities they hold. Such units, if they are resident, shall be treated as an integral part of general government and not as separate units. If they are non-resident, they shall be treated as separate units. Any transactions carried out by them abroad shall be reflected in corresponding transactions with government. Thus, a unit that borrows abroad is then regarded as lending the same amount to general government, and on the same terms, as the original borrowing." (ESA 2010)

**The ESA methodology focuses on economic events, and therefore, based on the accrual-based approach, it takes into account every transaction at the date when the economic value is created, transformed, exchanged, transferred or extinguished.** It takes into account the transaction related to the change in ownership at the time such change in ownership actually takes

[6] In terms of costs, the depreciation of fixed assets belonging to the special services is not necessarily sufficient to replace the assets; we have examples in Hungary when the depreciation of the railway was increased to make it more realistic. In terms of revenues, the price of market activity also includes the subsidy received by all producers/service provider engaged with the same activity. On the one part, this reduces the part covered by the customer and therefore affects its demand to a smaller extent. On the other part, the government defines the ordered service (e.g. number of passengers, minimum service-level) vis-á-vis the various producers (even if for a single producer) for which it is willing to pay and also defines the fees for the customers and evolution of the costs (wage increases). From this aspect, the effect of sales revenues on demand is also more limited than what it would seem based on the sales revenue ratio.

place, it takes into account the service at the time such service is rendered, and it takes into account intermediate consumption at the time of consumption. The accrual-based approach takes into account the zero coupon interest recording, circumventing cash-based accounting, which enables a more precise accrual of the amortisation (financing item) and of the interest (item affecting the deficit). Accrual-based accounting has several available methods.

- Very often it coincides with the cash-based approach, among others, in the case of transfers, such as pension payments.
- The simplest version of the accrual-based adjustment is the shift of the cash-based data (*time-adjusted cash*), for example, income taxes are not recognised when paid in, but instead, at the time when the income is generated. For certain taxes, the accrual-based method relying on tax returns is even more accurate.
- It is a typical case on the expenditure side that the invoice is paid later than the delivery of the ordered product or service. In such cases, when the accrual-based approach is applied, it is the time of the transfer of the economic value that counts and not the settlement date of the invoice. This means that delaying payments does not influence the budget balance.
- A relatively new, but relevant phenomenon due to its size is that when recording EU funds, the accrual-based adjustment is partly disregarded because the rules applicable to transfers apply. The date of the EU funds paid to the private sector is therefore separated from the actual economic performance and is recorded when the budget disperses the funds to the applicant. In these cases, therefore, cash-based accounting applies (and in this way, for practical reasons, it is exempt from accrual-based accounting).

**The ESA methodology prefers *market-based valuation* in general.** This rarely poses any problems because the majority of transactions take place at market price or the issue of valuation does not even come up (recording tax revenues, payment of wages and pensions). The valuation of contingent assets and contingent liabilities – where unexpected events give rise to the possibility of inflow/outflow of economic benefits to/from the entity – is, however, a difficulty. This mostly increases the deficit when the payment is

made (that is, similarly to cash-based accounting). It could, however, happen that the possibility of inflow/outflow can be taken for granted already at the time it was provided, which, in principle, should already be taken into account in advance.[7]

**For accrual-based deficit calculation, those revenues and expenditures are taken into account that affect the net financial worth (the balance of liabilities and assets) of the general government sector.** This statistical coverage is broader than net debt; it contains every financial asset and liability. Capital ownership and other non-debt type assets and liabilities, such as trade accounts payable or tax receivables are featured here. As a consequence, for example, privatisation is not considered general government revenue (as opposed to the cash-based balance), but a financing item, because it simply converts a share-type financial asset into a deposit asset, but does not change the sum of the financial assets.[8]

[7] According to the manual on ESA 2010, the occurrence is certain if: 1) it can be verified based on the provisions of the guarantee contract; 2) repeated guarantee calls, practically, this has happened over the past three years. If the user is fundamentally reorganised, it can be assessed whether the previous practice causing the guarantee to be called may be discontinued. The ESA 2010 also takes into account probability in the case of the numerous, standardised guarantees, such as export loan guarantees or student loan guarantees. The chance of calling an individual guarantee is negligible, but due to their high number, an estimate can be given for the number of called guarantees. In this case, these standardised guarantees can be handled as ones that generate financial assets instead of contingent assets. (This is similar to as if reserves were generated for covering the losses.) In the case of one-off guarantees, it is determined that for lack of comparable cases, no estimation can be prepared for the risk. Accordingly, these guarantees can be regarded as contingent assets or contingent liabilities.

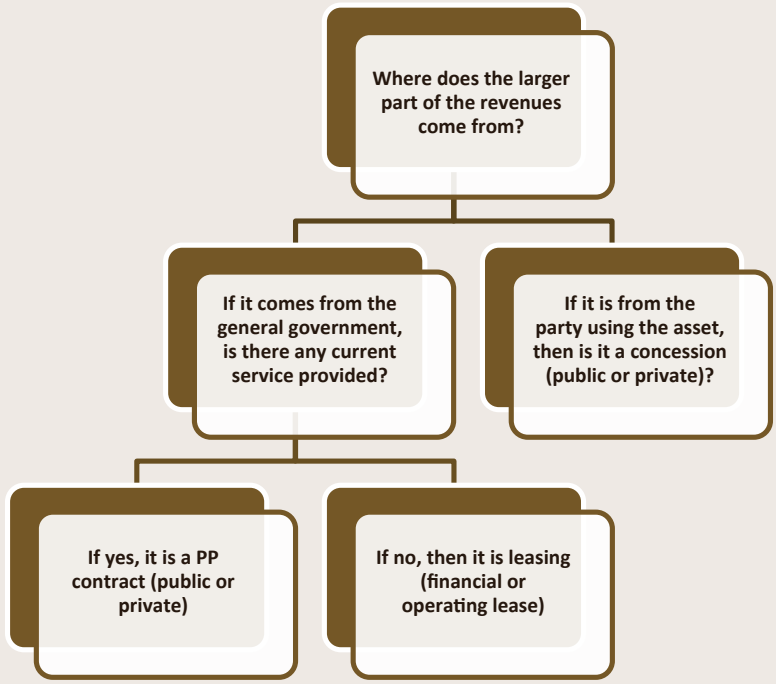
[8] The cash-based balance is consistent only with net debt and not with net financial worth. This is why privatisation (and on the other hand, acquisition of shares by the government) affects the cash-based deficit, but not the deficit recorded by the national accounts. An exception to this is when the government acquires ownership in a lossmaking company. Since it is presumable that this will not be recovered in the long term, instead the capital will be "lost", therefore it must be recorded immediately as an expenditure, that is, it increases government deficit.

**Box 2**

**Evaluation of long-term government contracts pertaining to the accumulation and the utilisation of special fixed assets**

**Based on long-term government contracts determining the accumulation and the utilisation of special fixed assets, in a legal sense, a long-term government expenditure obligation or transfer of future flow of revenues is accepted.** In this case, the true economic nature may differ, so it is possible that instead of these, the accumulation of fixed assets should be recorded in the deficit. The assessment of the economic reality requires the steps summarised in the chart below:

**Chart 2**
**Assessment scheme of special fixed assets**




First, it must be determined whether it is the ultimate user (e.g. the households) who pays for most of the revenues stemming from the utilisation of the asset (e.g. the highway). In this case, the System of National Accounts refers to the contract as a concession. If most of the revenues come from the general government (subsidy,

shadow price), then the next question is whether the contracting private partner is providing a current service in addition.

If it does, we may then consider this as a PPP contract; if it does not, then it is a leasing contract.

To decide whether a concession, a PPP project or a leasing contract is be statistically classified with the private partner or the government depends on how they distribute the risks and rewards between them. In other words, one must examine the issue of economic ownership, meaning that it is not the legal ownership that is decisive. If as a result of the assessment the asset is classifiable with the general government sector, then the asset shows up in the deficit at the time of its accumulation. Risks and rewards can be decided based on partly similar and partly different criteria.

In the case of a concession, the asset can be regarded as public if in the initial contract or at a later point in time the government guarantees the minimum revenue level (by guaranteeing the minimum level of utilisation) or ensures a minimum level of profitability. In addition to the occurrence of market risks, the government also regulates or limits the price paid by the users.

In the case of a PPP contract, the asset shall not be classified as public if the private partner assumes 1) the construction risk (due to extraordinary events: time and spending overruns due to legal, environment protection or technical problems) and 2) the risk of availability (quantitative or qualitative problems) or the risk of demand volatility. What has to be considered is whether the government has any possibility to impose a penalty in the case of non-compliance.

In the case of operating leases, the legal owner assumes the risks and enjoys the rewards so it is at the same time the economic owner. As opposed to this, financial lease is a lease facility whereby the lessee is the economic owner and the lessor is the legal owner. The financial lease is usually for the entire economic lifetime of the asset, but may also be for a shorter period of time. Because the lessee must assume the risks associated with utilisation of the asset, it is the lessee which assumes the gain or loss related to the expected residual value of the asset at the end of the leasing term.

Similarly to the statistical treatment, government contracts pertaining to the accumulation and utilisation of fixed assets require a similar assessment in the case of accounting. These may be operating leases, in which case the asset is actually owned by the government or they may be financial lease contracts where the private contracting party is the actual owner. According to International Financial Reporting Standards (IFSR) guidelines, the focus must be on the essence of these lease contracts. Accordingly, a transaction can be regarded as a financial lease if: i) the duration of the lease practically extends for the entire lifetime of the asset, ii) according to the

contract, the lessee may purchase the asset at a preferential price upon the end of the contract, iii) it is likely that the lessee will make use of this option in the given situation. In addition to considering availability and demand risk, recognition is also different in terms of the recording of public assets, because these typically do not generate any economic benefit (in which case they would have a market, for instance), but do have a service potential. Irrespective of the availability of an explicit guarantee, the government runs the ultimate risk because in the case of bankruptcy nobody would buy the asset, while the service would have to be ensured. Another special question is who specifies the nature of the asset. By this, they mean that the person who takes decisions regarding the key parameters of the investment and its operation (for example the quality of the road) proves that he is the owner. In other words, this party assumes the construction risk and later on, in the case of poor quality, also the risk of higher maintenance and repair costs.

**In summary, the advantages of the national accounts based statistical indicator include the fact that it is based on a considerably broader information base compared to the cash-based borrowing requirement.** In those countries and periods where no creative accounting is used, this methodology provides consistent and comparable time series, and even in the case of creative accounting, it contains more appropriate categories compared to the legal classification. Due to creative accounting, it also collects (and publishes) supplementary information on public corporations in the corporate sector, state guarantees and cash-based data.

**The disadvantage of this indicator is that more information also means that it is available later and due to corrections and it may not be reproduced differently from the cash-based data for users.** According to the methodological rules, public companies performing quasi-fiscal activities, e.g. transportation companies, are not visible within the coverage of the general government, and a large part of the PPP investments is also classified as private investment. A concern affecting the time series is that the possibility to spread the various capital incomes (e.g. concessions) in time is very limited. Managing uncertainty and contingency cannot be resolved either; apart from a few exceptions, guarantees and loans can be recorded only subsequently at the time the guarantee is called and when the loan is cancelled. The fact that certain adjustments are realised only from a certain date may cause breaks in the time series, and thus the previous period will not be comparable.

## 2.4 Balance definition based on accounting principles

**Application of some form of public sector accounting similar to corporate accounting has a tradition in many Anglo-Saxon countries.** For example, the United Kingdom introduced an accounting system that classified every public company within the general government; this solution enables the government to increase its control over the corporations, and at the same time it prevents the use of one channel of creative accounting. An international organisation, i.e., International Public Sector Accounting Standards Board (IPSASB) was also established in order to develop the methodological principles. The standards provided by this organisation, referred to as the International Public Sector Accounting Standards (IPSAS), are built on the same core principles as the ones applied for corporations by the IFRS. As they declare,[9] in contrast to the purpose of the statistics, international public sector accounting intends to provide better information which is needed for public sector financial management and decision making.[10]

With the exception of Government Business Enterprises (GBEs), ***public companies*** **are also included in the accounting definition of the general government sector in addition to the central budget, social security funds as well as regional and local governments.** IPSASB recently held a public professional consultation in this issue.[11] In the past, the emphasis was on defining the coverage of GBEs, but as a result of this consultation this category will be discontinued as of 1 January 2018.[12] From that date on, the emphasis will be on defining the group of companies that operate in connection with

[9] https://www.ifac.org/system/files/publications/files/IPSASB-GFS-Policy-Paper.pdf

[10] As part of the Six Pack, Section 16 (1) of Council Directive 2011/85/EU set out that "By 31 December 2012, the Commission shall assess the suitability of the International Public Sector Accounting Standards for the Member States". The completed report established that even though not every Member State may use the standards, they may still provide a useful starting point for preparing a potential European version (European Public Sector Accounting Standards, EPSAS). The working group, composed of European public accounting experts, was created with the objective to develop the EPSAS in the medium term and held its first meeting in September 2015. The first task of the working group was the implementation of IPSAS directives, such as accrual-based accounts, accounting definitions and special issues characterising the general government, such as tax revenues and pensions.

[11] https://www.ifac.org/publications-resources/ipsasb-consultation-paper-applicability-ipsass-government-business-enterprise

[12] http://www.ifac.org/system/files/uploads/IPSASB/Government%20Business%20Enterprises_Mar.pdf

the public sector and not on a business basis. The criteria for such an entity include the following: i) it provides services to the public or takes part in the redistribution of income/wealth; ii) it covers its operations from taxes, from the transfers of other general government entity or from borrowing; and iii) its primary objective is not to make profit. So far, based on the IPSASB's own evaluation, corporations' classification rules were stricter than the statistics (being classified as a GBE, fewer companies were taken out of the general government), but the question is to what extent this will change as a result of the new rule.

**Accounting has several types of financial statements, of which we would like to highlight two, although the dimensions of these financial statements differ from what we have discussed so far (cash-based or accrual-based approach).** One is the cash-flow statement which is based on the cash-based approach. However, this cannot be compared with the cash-based borrowing requirement (GFS86), because it separates current items from investments for which it claims both the acquisition and the sales of real and financial assets. The other statement is the balance sheet report (referred to as statement of financial position) which uses the accrual-based approach. This cannot be matched with the SNA/ ESA statistics, because this accrual-based approach includes the depreciation of fixed assets and not their accumulation.

**In line with the above two approaches, a dual solution prevails during the separation of financing items and items to be financed.** In the case of the cash-flow statement, *the items to be financed are the sum of the current cash-based balance and the (financial and real) investments.* Financing items include the changes in liquid assets, cash proceeds from the issued debt, the repayment of amounts borrowed, the cash payments from financial leases and dividend payments.[13] In the case of the balance sheet report, changes in (financial and real) wealth adjusted by revaluation can be regarded as financing, and consistently, the scope of the items to be financed covers the current accrual-based balance, including the depreciation of fixed assets.[14]

[13] https://www.ifac.org/system/files/publications/files/ipsas-2-cash-flow-sta.pdf

[14] https://www.ifac.org/system/files/publications/files/ipsas-1-presentation.pdf

We can establish that although accounting differentiates financial and real assets this is not of such a great relevance as in the case of the methodologies presented above.

**In the ideal case, the accounting also follows a *market-based* evaluation. However, due to the specific nature of the government, the concept of *service potential*** was also introduced, which enables the identification of the assets, liabilities, revenues and expenditures of a government entity (Lloyd Kenneth S. Chua, 2014). Corporate accounting (IFRS) does this through the concept of economic benefit. In relation to this difference, a similar discrepancy can be observed when accounting for the capital loss of assets not generating any cash revenues. As the vast majority of public assets do not generate any economic benefit and instead have a service potential, the IPSAS prepared a separate guideline for accounting these items. IPSAS deals with the guarantees the calling of which is unforeseeable during the evaluation of contingent liabilities. In this case, the information related to the guarantees should only be attached as a memorandum item (similarly to the provisions of the Six Pack). But if the *likelihood of the guarantee being called* increases, then this must be appropriately shown in the accounts *for the date when such information was published.* For example, if a municipal government was to breach an environmental protection rule, it is not clear whether any environmental damage would arise at that point in time. Whenever the damage appears, the coverage must be recognised prior to the likely future payment (IPSAS, 19).

**In conclusion, the advantage of the above accounting indicators may be that they provide more tools for preventing creative accounting.** In doing so, they can in principle ensure a better substantive comparison than the law and the ESA statistics. This accounting methodology can anticipate the impact of contingent liabilities already prior to realisation, whenever the likelihood appears.

**The disadvantage of these indicators is that the possibility of consideration may also mean arbitrariness.** Therefore, the results may be questionable without a clear communication of the key assumptions. Even in the case of accounting, processing information of larger quantities than the cash-based data, similarly to the national accounts statistics, entails a time lag, and therefore is less helpful for fast decision-making.

# 3 Main analytical indicators

## 3.1 Primary balance

**The primary balance is the fiscal balance calculated without interest expenditure.** This calculation is justified by the fact that the government is unable to influence interest expenditures in the short run (or only to a very limited extent). Interest expenditures are influenced by the outstanding government debt, market yields and government securities issued in the past. In the short run, they can be only slightly influenced via debt management (for example, borrowing in Hungarian or foreign currency, the issuance of short-term or long-term securities, fixed or variable interest rates). In contrast to this, the primary balance shows the balance of those items that the fiscal policy can directly impact.

**The primary balance is also relevant because a clear distinction between the primary balance and the interest balance is necessary in the case of long-term sustainability calculations and the long-term projection of the debt.** Similarly to the above, the reason for this is that these two indicators are influenced by very different factors. Fiscal policy can influence the primary balance by regulating taxes and expenditures, while the interest balance is more of an exogenous factor in the light of the debt and the yields.

**The primary balance may have several interpretations depending on whether only interest expenditures or also interest revenues are deducted from the deficit.** In the EU fiscal framework, the primary balance is defined by deducting gross interest expenditures from the deficit. This is consistent with the fact that they focus on gross government debt (the primary balance defined in this way can be interpreted when analysing the dynamics of the gross government debt). Theoretically, however, net government debt is a better indicator from the analytical perspective and consistently, it is better to deduct the interest balance (net interest expenditure, i.e. the difference between interest expenditures and interest revenues) from the deficit. International literature sometimes suggests a consolidated analysis of the general government and the central bank balance for the purpose of

economic analysis (see P. Kiss, 2011). This is because central banks manage their country's foreign currency reserves and their liabilities also include the securities issued by the government. In this case, the central bank's balance arising from the transactions – which is basically the balance of interest expenditures and interest revenue – can be excluded from the primary balance.

## 3.2 Cyclically-adjusted balance

**In practice, the primary balance or deficit does not show the medium-term orientation of the fiscal position, because the actual balance is also influenced by a temporary factor: the impact of the economic cycle.**

**The impact of the economic cycle on the fiscal balance is referred to as the cyclical component of the deficit.** We can more accurately determine the underlying position of the budget if we know to what extent the cyclical fluctuation of the national economy influences the budget. For this, however, we must know the distance of the economy from the equilibrium or trend value; this difference is the output gap. Moreover, we must have an estimation as to what extent the output gap will influence the budget. And for this, we need to know the link between the cyclical volatility of the economy and the tax bases, and between the tax bases and actual revenues.

**The cyclically-adjusted balance is the part of the fiscal balance without the cyclical component.** Accordingly, the cyclically-adjusted balance shows how much the budget deficit would be if the effects from the economic cycle were excluded. Let us call the exclusion of the cyclical component from the fiscal balance the cyclical adjustment. The cyclically-adjusted balance also indicates the medium-term orientation of the budget, i.e. what fiscal position can be achieved when economic equilibrium is reached.

**The first step is to define which tax and expenditure items depend on economic fluctuations.** According to the most widespread and simplest approach, all tax revenues and, from among expenditures, only the evolution of the unemployment subsidy depend on the cycle. The European Central Bank uses a different methodology (Bouthevillain et al, 2001) and the MNB also had an alternative approach (for the definition of the items, see P. Kiss–Reppa, 2010).

- On the one hand, they do not regard the direct tax contents of fiscal expenditures as cyclical, because these expenditures are not of a cyclical nature (and are not excluded either). Hence, the tax and social security contributions on public wages, production consumption and investments are not part of the cyclical adjustment.
- On the other hand, some other cyclical expenditures, for example real wage indexed pensions, are also considered, not only unemployment subsidies.
- Finally in the case of certain taxes, cyclical impacts are disregarded as well, because they depend on a tax base (e.g. special product) which does not show any cyclical movement or because it is a fixed amount tax that is not influenced by the cycle (e.g. levy on banks).

The lower revenue and higher expenditure weight mean that – *ceteris paribus* – the alternative methods show a smaller cyclical impact than the traditional indicators.

**In the case of the various tax and expenditure items, the second step is to identify the macroeconomic variable that defines their developments.** For example, in the case of corporate profit taxes this may be the gross operating surplus of the corporate sector. However, there are some minor taxes where the legal tax base (e.g. the extent of environmental pollution) cannot be linked to a single macro variable.

**The third step is to define the quantitative correlation between the tax or expenditure item and the macroeconomic variables. The elasticity between taxes and tax bases is basically determined by the characteristics of the tax regime.** If the legally defined tax base is close to the macroeconomic "tax base", then the trend of taxes will show a similar profile as the trend of the macroeconomic variables selected for the approximation of the tax base (for a detailed review, see P. Kiss–Vadas, 2006, pp. 124–130).

**For the sake of simplicity, international practice assumes a unit of elasticity between certain taxes and tax bases.** However, in the case of direct household income taxes and social security contributions, the OECD (and thus the EU as well) applies a different methodology. The average and marginal rates are calculated on a regular basis for the various income levels

adjusted by certain tax allowances based on the tax codes. The ratio of the weighted averages of the calculated marginal and average rates indicate the responsiveness of the revenues to changes in gross incomes.[15] This shows the additional tax paid if income increases by one unit. The methodology whereby the statistical relationship between the given fiscal and macroeconomic time series is estimated by regression is less frequently used in practice, because in the case of short time series and frequent measures affecting taxes, these results are not reliable.

**A time-varying elasticity is needed if a tax base does not move closely together with the change in the economic cycle.** An example for this is the corporate tax regime, which in most countries allows for the carry-forward of losses to subsequent years. This asymmetry causes deviation between the corporate tax base and the trend of macroeconomic variables; moreover this difference is not linear. In other words, a more significant downturn has a proportionally different effect on the legal tax base than a smaller downturn. This problem can be solved by estimating time-varying elasticity (which the cyclical adjustment methods used by international organisations fail to do). In addition, the legally defined corporate profit is different from the category of gross operating result, because it also includes statistical depreciation.

P. Kiss and Reppa (2010) presents in detail the elasticities applied by the MNB. In general, they assume unit elasticity with some exceptions. On the one hand, in the case of household income taxes and social security contributions, they use their own calculation similar to that prepared by the OECD. On the other hand, for corporate tax, they use the average value of the ratio between the gross and net operating balance. Finally, excluding discretionary measures and estimated cyclical components from the tax developments, they also checked the unexplained residual.

**The fourth step is the assessment of the cyclical position of macroeconomic variables.** The starting point of one of the approaches is that every variable is in the same phase of the cycle, while according to

[15] This value is fixed for the entire period, despite the fact that the tax code changes each year and so does the resulting elasticity. The recalculation performed every few years is applied retroactively for the entire period, so the cyclical calculation includes a single value for the whole period.

the other approach, the cyclical position of the variables may be in different phases. Hence, the latter anticipates the composition of the output gap, which is important because the various components of GDP affect the budget to different degrees. The size of the budgetary effects depends on how broad of a tax base the given GDP component can be considered. The tax bases found in macroeconomic statistics include public and private wages, corporations' gross operating surplus, household consumption and investments, public intermediate consumption and investments and private added value (in the case of local business tax). Corporate investments and exports do not represent a tax base, but are part of GDP.

Among international organisations, only the European Central Bank applies a cyclical adjustment which is able to take into account the composition effect of tax bases (Bouthevillain et al, 2001). This method defines the cycle-dependent fiscal items and their corresponding macroeconomic bases. Of the variables mentioned in the introduction, this method excludes public wages, intermediate consumption and investments and by doing so, it interprets the cycle as the private cycle. Due to their relatively lower weight, it excludes household investments from the private variables, which caused problems later on due to the housing market bubble (Morris et al, 2009). A further concern may be that from among the selected indicators, the corporations' gross operating surplus did not seem to be the best approximation for corporate profit based on experiences (Morris et al. 2009). The method applied by the MNB is based on the same variables with some minor differences (P. Kiss–Vadas, 2004; P. Kiss–Vadas, 2007; P.Kiss–Reppa, 2010).

**The most important step of cyclical adjustment is the estimation of the output gap.** The output gap is the difference between the economy's actual output driven by cyclical volatility and its trend (or equilibrium) value. Therefore, to estimate the output gap it is necessary to decompose the current development of economic growth into a temporary ("cyclical") and a trend component. However, this faces many obstacles because they are unobserved variables, i.e. only an estimation can be prepared for them. A detailed analysis of the decomposition is beyond the scope of our paper.

**Some papers (Forni and Momigliano, 2004; Cimadomo, 2008) demonstrated that the estimation of the output gap in real time, i.e. when fiscal policy decisions were taken, deviated significantly from the one that could be estimated based on subsequent developments.** The subsequent revisions of the output gap were due to the fact that the view on potential growth turned out to be worse, and therefore the output gap that previously seemed positive was found to be negative later on. The consequence was that in many countries, the fiscal policy that was intended to be countercyclical between 1994 and 2006 was subsequently found to be procyclical (Forni and Momigliano, 2004; Cimadomo, 2008).

## 3.3 Structural deficit

**In practice, the cyclically-adjusted fiscal position also does not necessarily reflect the medium-term position. Therefore, the structural deficit can eliminate the impact of additional temporary factors from the balance.**

**In addition to the cyclical impact, there are some other factors, independent from the intention of the general government, that may temporarily have a substantial impact on the government deficit.** These are, for example, the impact of **natural disasters or court rulings** (Koen and van den Noord, 2005). It is justified to exclude these from the medium-term direction of fiscal policy, as they may otherwise negatively distort the assessment of sustainability. However, their complete elimination would result in a positive bias because when assessing one period, we can observe their average size. Therefore, preparing a moving average may be a solution and the volatility of temporary factors could be interpreted in relation to this trend (Hoffmann and P. Kiss, 2010).

**Creative accounting operations represent a similar temporary bias. The very purpose of these operations is the temporary improvement of deficit and debt at the cost of the future**, which means that they do not affect the net worth of the general government (Koen and van den Noord, 2005). The specific scope of creative accounting depends on the reference base, i.e. on the deficit indicator intended to be circumvented. As we saw earlier, it is fairly simple to manipulate the cash-based borrowing requirements. In the following

section, we review the categories that may result in an apparent improvement even in the case of statistical deficit indicators which can be regarded as more protected (P. Kiss, 2011). The common characteristic of these operations is that their longer-term impact is zero because they have *a self-reversing* nature.

### 3.3.1 Quasi-fiscal activity of public corporations

Debt assumptions/capital injections appearing from time to time in the statistical deficit mostly cover the losses of public companies classified in the corporate sector subsequently, and therefore their presence signals that **the statistical definition of the general government sector does not cover the entire coverage of public companies performing quasi-fiscal activities.** While the scope of public services has expanded, these services are typically provided by public companies. In their case, government decisions define the service-level (service volume), the evolution of the main cost components (e.g. wage increase), the investments, revenues (the size of the user-fee and the government support) and the involvement of financing sources. Therefore, from the analytical perspective, it could be justified that the generated borrowing requirement be continuously recorded.

### 3.3.2 Financing revenue appearing as capital revenue

Creative accounting appearing in the form of special capital revenues has a longer history in the world than the quasi-fiscal activity of public companies. An old version of creative accounting is **the lump-sum capital revenue received in return for sales of future government revenues**, for example the concession related to radio frequencies. One can argue that the revenues to be realised are uncertain as opposed to the fixed fee payable by the contractor, i.e. the contractor buying the concession assumes risk. Irrespectively, depending on the contract, the payments assumed by the contractor could have been an amount paid annually (like a rental fee) but instead the lump-sum payment of the fee that is brought forward takes place, which is a financing item from the analytical perspective. The concession to be purchased can indeed be compared to a rent, and in this case the accrual-based fee should be spread for the entire period of the sold concession, irrespective of the actual concession payment.

There are some modern examples in certain countries for capital revenues containing financing components where in return for taking over the pension liabilities of public companies, the government received capital revenue. In this case, the liability created in parallel needs to be evaluated, i.e. the net present value of future current flows needs to be determined. Depending on whether the initial capital revenue exceeds or falls short of the opposing liability, the difference may be capital revenue or capital transfer. If they are equal to each other, then this is a simple financing operation (Paul and Schalck, 2007).

### 3.3.3 Outsourcing public investments into PPP schemes

**Deficit, expenditures and debt in a given year can be decreased by the outsourcing of investments, but because they create future expenditures, they do not improve the general government's net worth.** PPPs are special contracts, where the contractor undertakes to accumulate and operate capital assets providing a public service in return for government expenditure disbursed over a long period. The popularity of PPP investments can be explained by the fact that the short-term impact improving the deficit (and as such, also the debt) is favourable for fiscal policy, because this enables the circumvention of fiscal rules. Private partners are less interested in the short term (a grace period of even several years may be granted to the government), but overall they would like to receive the highest amount of long-term public funds (Monteiro, 2007). But if the risks are realised and the contractor goes bankrupt then the question is whether the capital asset is for general purposes or for specific public/community purposes. In the first case, the bankrupt asset does have a secondary market where it can be sold. In the second case, the government must intervene due to the bankruptcy. Accordingly, in the latter case, outsourcing of the investment cannot be effective, irrespective of the contractual "fine-tuning" of the risks and the statistical classifications based on such.

### 3.3.4 Hidden subsidy content of loans and guarantees

**Subsidised government loans and guarantees have considerably less significance.** The general motivation may be the facilitation of **alternative forms of government support.** Valuation of the guarantees as contingent liabilities in the statistics is difficult, while the subsidy content of the loans granted is not valued at all. As opposed to this, in terms of the quantification

of budgetary impacts, US law requires that federal authorities prepare annual estimations of the subsidy content of federal guarantees and loans. The IMF also suggested an alternative calculation method for this (Wattleworth, 1993). The preferential interest rate does not mean creative accounting in itself, as its budgetary impact appears immediately (as the interest difference of lending and borrowing). However, calls on the guarantees and debt forgiveness will impact the balance later on, and the extent of this is uncertain at the time of the extension.

## 3.4 Fiscal impulse

**The contribution of fiscal policy to aggregate demand – which may expand demand (expansionary), be neutral or contract demand (contractionary) – is referred to as the fiscal impulse.**[16] When measuring the fiscal impulse, it is important to exclude items without a significant economic impact (i.e. creative accounting) from the fiscal measures appearing to significantly improve the balance.

In reviewing the international practice, we can establish that the fiscal impulse is generally measured as the annual change in the deficit-to-GDP ratio, meaning that this indicator can be interpreted in the short run. Variables applied in practice:

– the deficit (B),
– the primary balance (PB), i.e. by excluding the interest balance,
– the cyclically-adjusted deficit (CAB), i.e. by excluding the impact of the economic cycle,
– the cyclically-adjusted primary balance (CAPB), i.e. by excluding the interest balance and the impact of the economic cycle,
– the structural balance, i.e. by excluding the impact of the economic cycle and any additional temporary items,
– the structural primary balance, i.e. by excluding the interest balance, the impact of the economic cycle and any additional temporary items.

[16] According to the original definition: the fiscal impulse indicator is used – for example in the IMF's World Economic Outlook – to assess the annual contribution, whether expansionary, neutral, or contractionary, of budgets to aggregate demand. (Chand, 1993)

The difference between these is whether or not the indicators include the impact of i) the cycle, ii) yields, and iii) temporary items and creative accounting. De Castro et al, 2010 provides a detailed overview of this topic.

The reason for excluding the cycle and yield impact is that by doing so, discretional fiscal measures will remain in the change on a residual basis.

However, the accurate real-time estimation of the cyclical impact poses a problem, because it is often significantly revised subsequently. Moreover, the impact of additional factors should also be excluded, for example, that of inflation.

**The consideration in favour of non-cyclically-adjusted indicators is that it is not worth excluding the impact of automatic fiscal stabilisers,**[17] **because they are also part of the fiscal impulse.** As it is based on the fluctuation of publicly available indicators, it increases comparability between countries and it is methodologically more simple (according to de Castro and co-authors, it can be "less manipulated"). However, the change in the deficit or primary balance also contains the effect of the economy on the budget simultaneously with the impact of fiscal policy. In this sense, it could also be interpreted as net impulse or net stimulus (de Castro, et al. 2010).

One aspect in favour of structural indicators adjusted by the impact of creative accounting is that **in the course of specifically determining fiscal impulse, one must strive to filter out the items which do not have a significant economic impact from among the fiscal measures appearing to significantly improve the balance.**

## 3.5 Summary of general indicators and analytical indicators

In the table below, we summarise the main characteristics of the indicators discussed in this Handbook. The simplest general indicator is the cash-based balance. By contrast, the accounting and the ESA balance adjust the balance using the accrual-based approach and by excluding potential creative accounting.

[17] The automatic fiscal stabiliser function of fiscal policy is when budgetary expenditure increase at a constant pace and do not follow fluctuations in tax revenues, thereby smoothing the volatility of economic performance.

In principle, the adjustments discussed in relation to the analytical indicators can be performed with any of the general indicators. Interest expenditure can be deducted from any balance category (this is how we obtain the primary balances belonging to the various general indicators). The impact of the economic cycle and the individual items as well as creative accounting can also be filtered out from every individual general indicator.

Adjustments can also be combined. The structural balance is the indicator adjusted with cyclical impacts, individual items and creative accounting. This in itself represents several adjustments (which may be performed in principle for any general indicator), but the list could continue with the exclusion of the interest balance (which leads to the various types of primary balances).

**The significance of the augmented (SNA) balance (see in the next chapter) comes from the fact that its change can be regarded as a good approximation of the fiscal impulse.** What it shows is that if we disregard the impact of yields, then how much financial resources the general government receives from and how much financial resources it provides to the rest of the economy in net terms.

**Table 5**
**Summary of the main characteristics of the discussed balance indicators**

| | Includes the Proceeds of privatisation | Accrual-based accounting | Exclusion of creative accounting | Exclusion of cyclical impact | Primary balance can be calculated |
|---|---|---|---|---|---|
| Cash-based balance (GFS86) | + | – | – | – | + |
| Accounting balance | – | + | +/– | – | + |
| ESA balance | – | +/– | –/+ | – | + |
| Cyclically-adjusted ESA balance | – | +/– | –/+ | + | + |
| Augmented (SNA) balance | – | –/+ | + | – | + |
| Cyclically-adjusted augmented (SNA) balance | – | –/+ | + | + | + |

*Note: in case of a +/- prefix the given characteristic is partly or more typical, in case of a -/+ prefix the characteristic is less typical.*

# 4 Indicators for Hungary

## 4.1 Augmented (SNA) indicator

**Similarly to numerous institutions,**[18] **the MNB also calculates an analytical indicator referred to as the augmented (SNA) balance** (see P. Kiss, 2011 for a detailed description). **The aim of the indicator is to provide an up-to-date analytical tool by excluding measures that do not have a significant economic impact.** To achieve this, it corrects the almost instantly available (GFS86 methodology) cash-based data and the detailed forecasts based on them at the points where they are biased. In the past, these were often creative accounting type items, so their impact had to be corrected as soon as possible, as early as at the forecast level.

From the 1990s to the early 2000s, the HCSO (Hungarian Central Statistical Office) did not yet publish statistics consistent with the System of National Accounts. Accordingly, during this period, the significance of the augmented (SNA) indicator also stemmed from the fact that it implemented several corrections which were consistent with the corrections of National Accounts, which explains the reference to the SNA (System of National Accounts) abbreviation. However, it failed (and still fails) to follow several other statistical corrections and this is indicated with the use of brackets.

**From the early 2000s, the ESA deficit became more significant and also raised the issue of creative accounting to circumvent statistical records for shorter or longer time periods.** There were some techniques that worked in the short run: for instance, the subsequent realisation that the methods of recording highway construction costs outside the budget during the mid-2000s was not consistent with statistical requirements and should have been classified as part of the budget from the onset when introducing the budget bill. From this perspective, the significance of the augmented (SNA) indicator has increased as a reliable analysis which includes the forecasting period and can only be performed under this approach. Other solutions, such as the quasi-fiscal deficit of transportation companies also did not turn out to be

[18] New Zealand (Philip and Janssen, 2002), USA, Congressional Budget Office (CBO, 2002), Slovakia, (Ódor, 2011, 2014), the IMF for Mexico (Meredith et al, 2003) the IMF for India and China (IMF working paper 14/4)

inconsistent with statistical requirements in the long run, and is only recorded continuously by the augmented (SNA) indicator in the year of occurrence.

**To calculate the augmented (SNA) indicator, as a first step, financing items, easily identifiable among government revenues and expenditures, had to be excluded from the cash-based balance, similarly to the adjustments of National Accounts.** These include general government lending and its repayment and the acquisition and sale of equity (proceeds of privatisation). This is because proceeds of privatisation were included in official statutory accounts until 2007 and were only deducted from revenues in the official presentation of the deficit.

**As a second step, the MNB's analytical indicator also augmented the legal coverage of the general government (hence the name "augmented") with the institutions engaged in quasi-fiscal activities.** Among these, the System of National Accounts also recognised state privatisation entities, which spent financing type privatisation proceeds on non-financing type expenditure, within the government sector. **The MNB's analytical methodology extended the statistical approach by augmenting the government deficit with the borrowing requirements of the national railway system (MÁV) and the Budapest Public transportation company (BKV).** Consolidation naturally also meant that subsequent capital injections and debt assumptions did not increase the fiscal deficit.[19]

**The only limited use of accrual accounting by the augmented (SNA) was a divergence from the ESA's statistical approach.** Instead, it was based on the official statutory accounts, which are based on the modified cash accounting principle.[20] By contrast, the MNB's analytical indicator only applied

[19] Under the ESA, MÁV Start Vasúti Személyszállító Zrt. was moved to the general government as from 1 July 2007, but remained outside MÁV holding, so its borrowing requirement still needed to be added to the deficit in the analytical indicator.

[20] Act CXCV of 2011 on Public Finance / Article A (1) Revenues and expenditures in the general government.
(4) Revenues and expenditures must be taken into account on a cash basis. Besides the cash-based items, the supplementary items not associated with any cash flow defined in the Government decree must also be recognised as revenue or expenditure.
(5) The impact of changes in liquid assets which are prepayments and do not represent their final utilisation, cannot be recognised due to the absence of the conditions necessary for identification or are related to cash flows of liquid assets, deposits or other safekeeping, the handling of liquid assets received as collateral, the subsidies or collection of revenues within the general government or the implementation of expenditure payments cannot be recorded as revenues or expenditures.

an accrual-based recording similar to the National Accounts in the case of interest and value-added tax. The discrepancy is small in the case of interest, but the VAT differs substantially in certain years. The practical significance of VAT adjustment stems from the fact that the tax authority is the party which determines the timing of the refunds. As the accrual-based approach of the Hungarian application of the ESA methodology in the early 2000s opted for what is referred to as time-adjusted cash method (cash data delayed by one or two months), this timing of refunds was able to affect the ESA deficit. Accordingly, as refunds were delayed in 2003, according to our estimate, the government was able to improve its cash-based deficit by 1 per cent of GDP. The ESA methodology was therefore changed; the accrual-based adjustment is based on tax returns when calculating the accrual-cash difference in the case of VAT refunds.

**The MNB's analytical indicator also applied an adjustment that differed from the National Accounts in the case of road construction**, as some investments were recognised neither as cash-based nor as accrual-based expenditures in 2003–2004, and payments were deferred to subsequent years of the budget to the companies the building the motorway road network. In order to filter out the bias, the MNB's analytical indicator applied an estimate that compared the budget payments with the part of the total investment expenditure proportionate to individual construction phases in order to define the deferred payment.

**Lump-sum concessionary revenues were accrued (distributed) over the entire period of concession by the augmented (SNA) indicator.** By contrast, both the accrual-based statistics and the cash-based budget record the concession fee as a single sum. In our opinion, an alternative to the lump-sum concession would be for the government to require the sum to be spread out consistently with the continuous generation of income. The claiming of early payment as a lump-sum can therefore be regarded as financing, and accordingly, the MNB augmented (SNA) indicator for instance also spreads such capital revenues out over the entire contract term.

**Another difference was the treatment of PPP investments, which peaked in 2005–2006.** The impact of PPP investments is only recorded in cash-based

data subsequently and spread out over time. In reality, it would be important to recognise quasi-fiscal items in a timely manner, upon implementation of the investment project. As a result, the augmented (SNA) records PPP investments as expenditures increasing the deficit at the time of the accumulation of the fixed asset. By contrast, in the future, an adjustment must be applied to offset this. The availability fee of PPPs appeared as a regular annual expenditure in the general indicators for 15-25 years, depending on the contract terms. However, as the augmented balance already recorded the cost of the investment at the beginning of the period, and it should exclude the investment-related repayments incorporated into future fees as expenditures. There is far less data available in this regard, so the augmented (SNA) indicator could only rely on estimates on developments in such investments, made on the basis of the total value of specific PPP programmes and the length of the corresponding investment project. To our knowledge, most PPP programmes were all left out from government sector statistics when the National Accounts classification was launched. Afterwards however, many projects were reclassified and subsequently became government sector assets.

**The MNB's analytical indicator applied two alternative approaches to address the missing social security contribution revenues stemming from the operation of the fully funded private pension system between 1998 and 2010.** The augmented SNA deficit, similarly to the ESA deficit, also increased due to these missing revenues, as one (statistical) interpretation of the deficit links the deficit to the change in the government sector's net financial worth. Due to the rise in debt and the decrease in net financial worth, the deficit also had to reflect this. On the other hand, the missing revenue had to be readjusted in the change in the primary augmented (SNA) balance. According to the other definition of the deficit, the general government is either putting financial resources at the disposal of the rest of the economy or utility the financial resources generated by other sectors. In this sense, there was no transfer of funds, as the missing revenue was not used by private pension fund members, and instead formed "forced savings". The indicator adjusted for these revenues is referred to as the augmented (SNA) deficit, while the unadjusted indicator is referred to as the augmented (SNA) borrowing requirement by P. Kiss (2011). The 2011 change in the private

pension system (its reduction to a minimal level) rendered this dual treatment (and designation) unnecessary. The MNB's analytical indicator retroactively treats the revenues as if they had not been lost, and therefore did not record their subsequent transfer into the budget. The transfer of private pension fund assets to the budget was regarded as capital revenue under the ESA95 (resulting in an ESA balance surplus in 2011), but later classified as a financing item under ESA2010 (i.e. not taken into account as revenue affecting the balance). The transfer of assets is recognised under the ESA as revenue not in the period under review (adjusting for the revenue lost), but projected forward over several decades as an accrual-based adjustment, compared to the theoretical scenario in which the fully funded system had not been abolished.

**Chart 3**
**Various deficit indicators in Hungary**

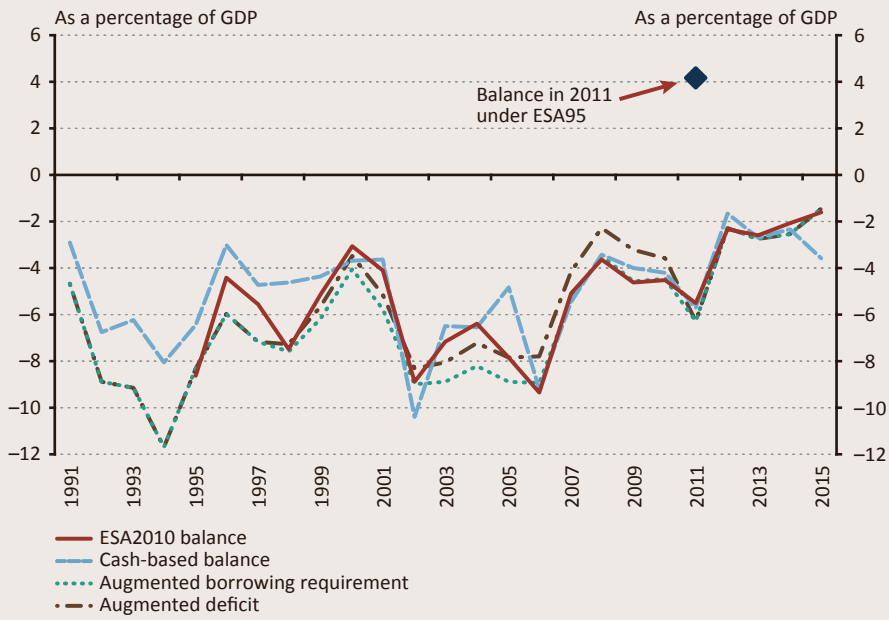


Chart 3 shows that until 1994, partly due to the fiscal costs of economic transformation, the balance deteriorated continuously according to the available balance indicators. In the case of the augmented (SNA) indicator, the deterioration is far more pronounced than in case of the cash-based requirement, and the deficit would be even far higher if capital transfers linked to the transformation and implemented in the form of transfers of government securities (e.g. bank consolidation) were recorded (P. Kiss–Szapáry, 2000). This was followed by a sizeable fiscal adjustment in 1995-1996, partly based on surprise inflation. The improvement in the balance that occurred at this time appears to be of similar extent among all indicators, but on the other hand, it did create a negative fiscal impulse. The deficit increased in 1997-1998 due to the electoral cycle, but its impact was successfully reversed in 1999-2000 and a smaller deficit than before was achieved. Between 1997 and 2002, the ESA indicator and the augmented (SNA) indicator converged in terms of their level. The deficit increased significantly from 2002 onwards, primarily due to rising consumption and transfer expenditures. From 2003 onwards, the adjustment constraint led to a rise in creative accounting rather than an actual reduction in the deficit, and although part of this was later corrected at the level of the ESA deficit, another part (such as the outsourcing of PPP investments) is still included only in the augmented (SNA) indicator. As a result, between 2003 and 2006, the augmented (SNA) balance shows a deficit that is even higher than the official ESA deficit. As a consequence of the high ESA deficit, Hungary was under an excessive deficit procedure (EDP) from 2004, i.e. from its accession to the EU. From 2006 onwards, several waves of actual deficit reductions were implemented, but they only became successful after 2010. In 2011, the deficit increased temporarily due to a methodological change,[21] but the budget balance subsequently achieved greater stability than ever before. One outcome of this was the abrogation of the EDP against Hungary in 2013.

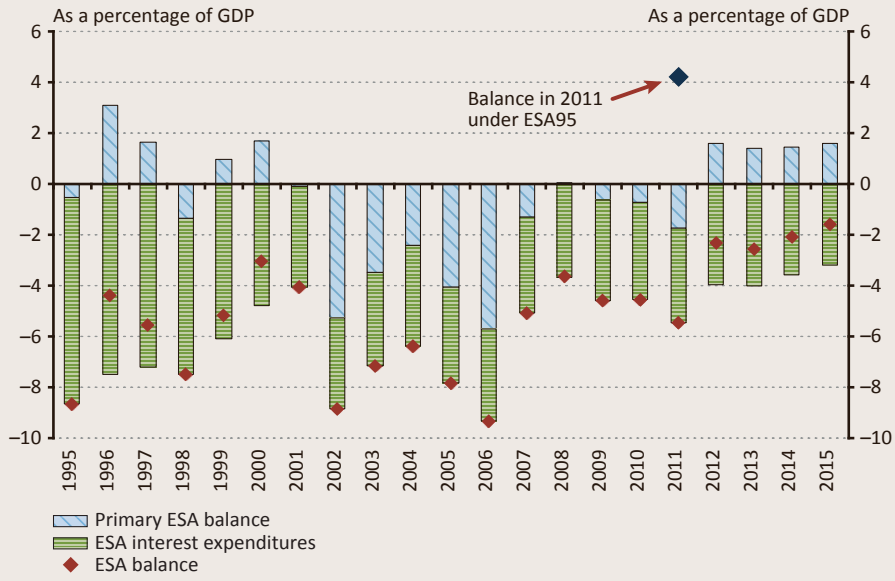
[21] According to the rules of the ESA95, the 2011 reform of the fully funded private pension system improved the balance with a significant capital transfer (amounting to 10 per cent of GDP), turning it to a surplus. Later however, the rules of ESA2010 classified this as financing which was not eligible for recognition as revenue. Although, one-off expenditures related to payments of yields to private pension fund members were still recognised as ESA expenditures. As a result, the budget deficit become higher after the methodological change.

## 4.2 Primary balance

As a result of high government debt and yields, Hungary's interest expenditure is relatively sizeable as a proportion of GDP. This explains the special significance of the examination of the primary balance, which is the main factor for reducing debt. An analysis of the time series also shows that the interest balance has improved continuously in recent years, so all other things being equal, a lower primary surplus is enough to decrease debt. Interest expenditures were around 4 per cent of GDP during the crisis, decreasing to 3.2 per cent by 2015. Due to the sustained low yields and the gradual repricing of the previously issued debt, interest expenditures are expected to decrease even further in the coming years. The primary balance showed a surplus in 2012 for the first time since 2000, which has then persisted over the years.

The MNB's analytical indicator adjusts for net interest expenditures and also removes its balance generated by MNB transactions – which is basically the balance of interest expenditures and interest revenues – from the primary

**Chart 4**
**Primary ESA-balance and interest expenditures in Hungary (as a percentage of GDP)**



balance.[22] This is explained for instance by the situation that departs from international practice whereby until 1999, the MNB had contracted the majority of the foreign currency loans of the country under its own name and kept them on its own balance sheet (creating net foreign currency liability for the central bank instead of net foreign currency assets).

## 4.3 Cyclically-adjusted balance

**The cyclical component estimated by cyclical adjustment can be used to adjust several general indicators depending on the purpose of the analysis.** The resulting indicator is referred to as the cyclically-adjusted deficit. In the case of Hungary, the developments between 1991 and 2015 were so pronounced that the basic trends, i.e. periods of deficit expansion and contraction, barely changed after the removal of the cyclical component.

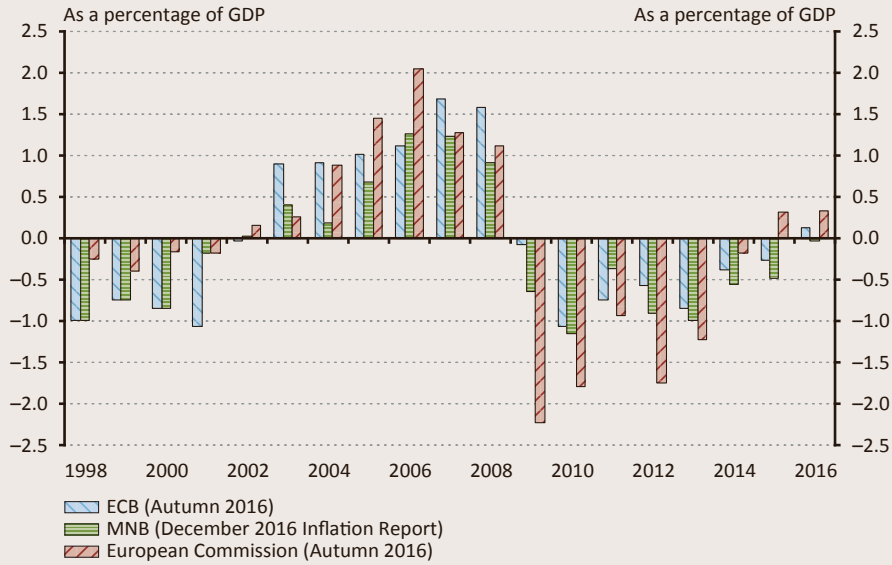
Cyclical adjustment is most often referred to as the adjustment of the ESA deficit, which plays an important role in the EU's fiscal framework. For analytical purposes, however, cyclical adjustment is also worth applying to the augmented (SNA) balance. This indicator both excludes real economic fluctuations and creative accounting, and therefore differs from the traditional structural deficit in that it does not remove the impact of natural disasters and court rulings, or identify individual items as "one-off" effects (for more on the latter, see Hoffmann and P. Kiss, 2010).

For methodological reasons, the estimated cyclical component differs substantially in the calculations of the MNB and the European Commission. For example, the Commission estimated a negative cyclical component exceeding 2 per cent of GDP for 2009 based on the negative output gap. However, considering that wages and consumption, which are the main tax bases, had not yet decreased in 2009, the negative component based on the MNB's and ECB's method is between zero and 0.5 per cent. There is also

[22] The fact that the net appreciation of assets was the general factor instead of the profit or loss on transactions distorted the central bank's payment to the budget from 1997 onwards, and the actual loss on the transactions nevertheless still disappeared. The amendment to the Act on Public Finance put an end to this in 2003. From this point on, the balance of MNB transactions had to be included in the balance of the general government regardless the sign, while the revaluation recognised in the profits is only considered a financing item.

a significant discrepancy in the estimation of the negative component for the year 2012. The Commission estimates higher and higher positive cyclical component for 2015–2018, as opposed to the MNB and ECB estimates of close to zero. As a result, the Commission has calculated a higher cyclically adjusted deficit (structural deficit). This is why choosing the most adequate method for cyclical adjustment, which takes into account the composition effect, would have substantial practical significance. Unfortunately, the European Fiscal Framework does not allow for any deviation in its cyclical adjustment methodology, and thus this may be a continuous problem.

**Chart 5**
**Various cyclical component estimates in Hungary**



# 5 Conclusions

This paper shows that when dealing with fiscal issues, there is no universal concept of "deficit", as different indicators provide answers to different questions. An in-depth review and comparison of the questions that can be examined and the available indicators clearly show that neither one nor two indicators can have an exclusive role in figuring out "the fiscal balance". In the past, the European fiscal framework had focused exclusively on the statistical ESA balance and its cyclically adjusted version, but it now also monitors the cash-based borrowing requirement and the methodology of the accounting balance. Within the framework, certain shortcomings of cyclical adjustment would be corrected using the expenditure rule serving as the basis of comparison. Broader international experiences show that the alternative indicators defined by various institutions in certain countries allow for deeper analysis and also process additional information. The MNB's indicators also served this purpose. Their presentation provided an in-depth overview of the methodological solutions chosen for excluding creative accounting and the cyclical effects.

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