



Public finance baseline scenario

Erik Bugyi

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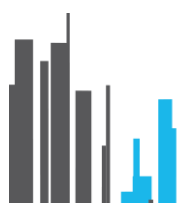
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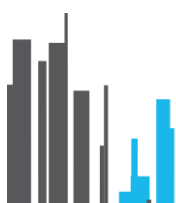
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ABSTRACT

This paper describes the construction of the baseline scenario for next 50 years. The baseline scenario is based on the European System of National Accounts (ESA) methodology and compatible with all national budget classifications. To increase transparency, detailed calculation will be published regularly in order to assess the long-term sustainability (Report on the Long-Term Sustainability of Public Finances) or the general government budget (Evaluation of the General Government Budget).

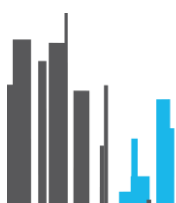
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Introduction

The public finance sustainability is a complex concept that needs to be analyzed through different angles. The Council for Budget Responsibility has decided to analyze long-term trends in public finances from four aspects¹: (1) solvency, (2) stability, (3) growth, and (4) intergenerational equity. These were presented and discussed at the 2013 Advisory panel meeting.

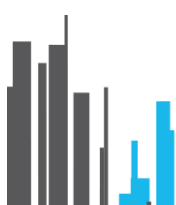
Aspects of solvency and stability were analyzed already in the 2013 Report on the Long-Term Sustainability of Public Finances². Remaining two aspects of public finance sustainability were included in the 2014 Report³ for the first time.

For solvency analysis, CBR uses long-term sustainability indicator (GAP) to quantify the required amount of permanent tax or expenditure measures that are necessary to keep the government debt in the next 50 years below the upper limit set by the constitutional law. The calculation is based on the baseline scenario which simulates long-term trends without changes in the existing policies. This paper **describes the construction of the baseline scenario for next 50 years**. The baseline scenario is based on the European System of National Accounts (ESA) methodology and compatible with all national budget classifications. To increase transparency, detailed calculation will be published regularly in order to assess the long-term sustainability (Report on the Long-Term Sustainability of Public Finances) or the general government budget (Evaluation of the General Government Budget).

¹ CBR discussion paper : [How to evaluate the long-term sustainability of public finances?](#)

² [Report on the Long-term Sustainability of Public Finances \(April 2013\)](#)

³ [Report on the Long-term Sustainability of Public Finances \(April 2014\)](#)



1 Public finance baseline scenario

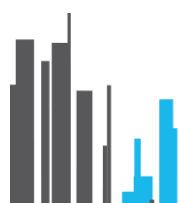
The public finance baseline scenario is necessary to calculate the long-term sustainability indicator (GAP)⁴. It says how the public finances would develop if they were not affected by government's interventions and their development was only subject to the current policy frameworks⁵, economic and demographic assumptions. Even though such a situation is extremely hypothetical from the long-term perspective and is very unlikely to occur⁶, it can help estimate a government's contribution to the sustainability of public finances (by calculating the **long-term sustainability indicator**⁷). In the medium-term, the baseline scenario is more likely to become a reality; this concept is therefore also used to evaluate the existing fiscal policy pursued by the government, as presented in a general government budget for the next three years (by calculating the medium-term indicators 'size of measures'⁸ and 'government consolidation effort'⁹).

1.1 Defining the baseline scenario

The Fiscal Responsibility Act defines the **public finance baseline scenario** as the long-term projection of general government revenues and expenditures which reflects the future economic and demographic developments and the current policy framework in the Slovak Republic; the general government liabilities also include the implicit and contingent liabilities of the general government.

Setting clear rules for its compilation requires specification of the definition in the following four aspects:

-
- 4 Amount of permanent changes in taxes or expenditures (as % of GDP) that are necessary to keep the public debt in the next 50 years below the upper limit set by the law.
 - 5 CBR distinguishes between current policy and current legislation principle. For example, in cases where legislation does not specify any automatic indexation rule (or one that is implausible over long time), CBR uses own indexation rule based on expert judgement or empirical evidence. For more information see part about indexation rules.
 - 6 This particularly applies in the event of unsustainable public finances where the debt reaches unsustainable levels in the future under the currently applicable rules.
 - 7 Long-term sustainability indicator means a difference between the actual value and the long-term sustainable value of the structural primary balance, expressed as a percentage of gross domestic product.
 - 8 It is the difference between the desired/actual balance and the general government balance under a no-policy-change scenario in a given year. In other words, it says how large the overall impact of government measures included in the budget is.
 - 9 It represents the difference between a year-on-year change in analytically adjusted actual/planned balance and a year-on-year change in balance under the no-policy-change scenario. In other words, it expresses a contribution of the government's current effort to the permanent improvement of balance.



- **Projection horizon**

*The projection¹⁰ of revenues and expenditures is prepared for a period of **the next 50 years** in accordance with the definition of the long-term sustainability¹¹ contained in the Fiscal Responsibility Act.*

*Given the different level of detail of available macroeconomic and demographic development assumptions in Slovakia, the **projection is divided into two parts**, with **their consistent linking being an underlying prerequisite**:*

*A) **medium-term part** with more detailed assumptions covering the first four years of the projection¹² and;*

*B) **long-term part** with more simplified rules covering the subsequent years (year 5 to 50).*

- **Indexation rules**

Rules are defined based on macroeconomic, demographic and other assumptions separately for the medium-term and the long-term part and for each correlated group of general government revenues and expenditure. Many of them are defined by legislation.

*However, for a number of items (e.g. wages, operating expenditure, some of the social expenditure), their development does not depend on applicable legislation; they are **directly subject to government decisions**. In those cases, **rules were set and direct interventions and/or inactivity of the government ignored**. In the medium term, they should be linked to legislation if they are related items (some types of social benefits) or to the most appropriate macroeconomic indicator derived from customary practices and past experience with the given item (e.g. linking development in operating costs to inflation). In **the long term**, assumptions concerning the development in those items need also to be considered from the point of view of their possible distributive effects¹³.*

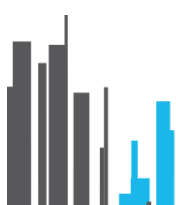
***The rules concerning the development in revenues and expenditures were defined independently and the assumption of their mutual interconnection was applied in justified cases only** (for example, an identical transaction recorded both on the revenue and the expenditure side without consolidation).*

¹⁰ Given that this is one of the possible scenarios, and not the most likely one, for public finance development covering a relatively long time horizon, the term 'projection' is further used in the text. The term 'forecast' is usually used to refer to the most likely scenario.

¹¹ Fiscal Responsibility Act defines the long-term sustainability as such a condition of public finances in the Slovak Republic in which the general government balance and general government debt remain at levels which ensure that no expected change in general government revenues and expenditures compared to the baseline scenario brings the general government debt above the upper limit in the nearest 50 years.

¹² A time period identical to the period covered by the general government budget.

¹³ For example, inflation-linked indexation of benefits would preserve their purchasing power over time, but its share in an average wage would decrease, i.e., the beneficiaries would be relatively poorer than the others. Therefore, in the long-term it is preferable to link these expenditures to nominal GDP growth.



- **Current policy framework**

The baseline scenario should not reflect any future legislative changes, that is, changes that were not in force at the date of preparation of the baseline scenario (e.g. legislation at a preparatory stage).

The CBR aims to incorporate the applicable¹⁴ legislation in the baseline scenario to the largest possible extent, which is especially necessary in the case of major items (tax and social contribution revenues, social expenditures that are modelled over the long term). In other cases, effective legislation is taken into account. Any legislative changes not covered in a given year will show in the baseline scenario with a one-year delay¹⁵.

It was also necessary to specify a date as of which the legislation considered in the baseline scenario is applicable. Since the baseline scenario is based on actual data, the applicable legislation refers to that at the end of the period of the actual data¹⁶.

A time aspect of the legislation is also important. Changes extending beyond the government's term in office are, due to a relatively high risk of their reversal in the future, incorporated in the baseline scenario only partially, or, in extreme cases, they are not included at all. Feasibility of such measures and the degree of their integration in the baseline scenario are assessed on a case-by-case basis.

- **Implicit and contingent liabilities of the general government**

*A baseline scenario should also include a projection of implicit and contingent liabilities. A key criterion for identification and inclusion of such liabilities is **the possibility to reliably project revenues and expenditure**. For the sake of prudence, it is advisable to focusing on those that have negative effects (a rather conservative approach).*

Three groups of such liabilities have been identified: those related to population ageing, those related to a PPP project for road infrastructure development, and those related to the decommissioning of nuclear facilities. With respect to other implicit and contingent liabilities, such as legal disputes and economic performance of state owned corporations, no reliable projection of their budgetary implications currently exists. Therefore, they are not included in the projection under the baseline scenario.

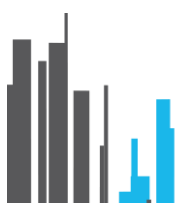
1.2 Procedure for compiling the baseline scenario

The baseline scenario is based on the European System of National Accounts (ESA) methodology. The procedure for its construction (Table 1) can be divided into four steps:

¹⁴ Legislation becomes applicable upon publication in the Collection of Law but may enter into effect on a different day.

¹⁵ For illustration, a baseline scenario based on the actual data for 2013 does not incorporate certain legislative changes with effect from 2014. Those legislative effects will be reflected in actual data for 2014 and will become part of a baseline scenario built on the actual data for 2014.

¹⁶ In other words, where the baseline scenario is based on the revenue and expenditure balance for 2013, the scenario should reflect the legislative framework in place at 31 December 2013.



1. **adjusting the actual revenue and expenditure balance** to net out effects that will not show up in the projection (one-off effects) - part 1.2.1;
2. **drawing up a medium-term scenario** following the defined rules as described in part 1.2.2;
3. **drawing up a long-term scenario** following the defined rules as described in part 1.2.3;
4. **interlinking both parts of the scenario** - due to a different level of detail and different sources of assumptions, as well as items of the revenue and expenditure balance defined differently under the two parts of the scenario. For details, see part 1.2.3.5.

Tab 1: Baseline scenario for development of public finances												
	t -> t*	t+1	t+2	t+3	t+4	4. interlinkage (part 1.2.3.5)	...	t+10	t+20	t+30	t+40	t+50
Revenue and expenditure balance	1. actual balance (part 1.2.1)	2. medium-term part (part 1.2.2)						3. long-term part (part 1.2.3)				

Note: * adjustment for one-offs; t - year with available actual data (outcomes)

Source: CBR

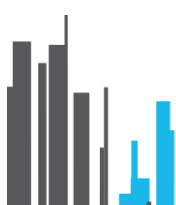
1.2.1 Actual balance

The preparation of the baseline scenario is based on the **consolidated balance of revenue and expenditure of the general government from the last year for which actual data are available (i. e. actual balance)**. In particular, it entails data from **cash-based reports in the State Treasury** and their adjustments following the transition to the ESA95 methodology **from the database of the Statistical Office of the Slovak Republic** which are recorded under several classifications¹⁷. Such classification of individual transactions enables a detailed work with the data and disaggregation of the balance into eight components (Scheme 1). The underlying reasons for such structuring of the balance are the setup of the rules for development of certain items depending on the type of classification and the need to match items in the long-term scenario (classification by functions) with those contained in the medium-term part of the scenario (economic classification).

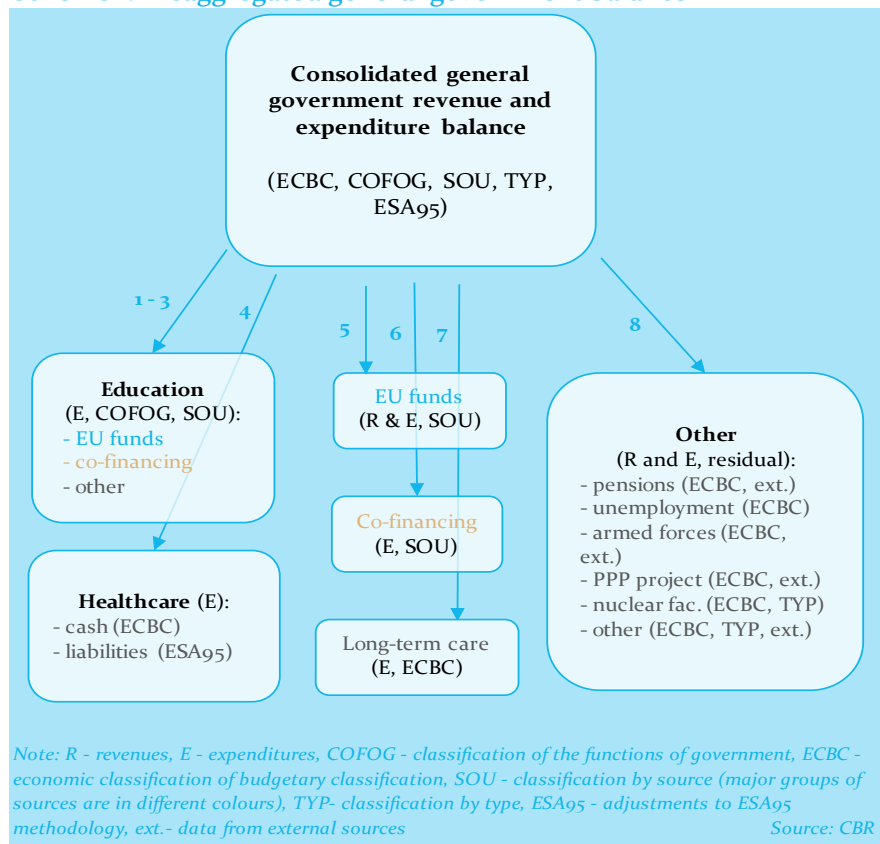
As the next step, the revenue and expenditure balance is adjusted for **all one-off effects**. Afterwards, **the rules described in parts 1.2.2 and 1.2.3 are applied on the adjusted balance**, enabling to prepare the baseline scenario. The rules are applied to individual items/sub-items of economic classification¹⁸. At the same time, one-off effects known at the time of preparation of the baseline scenario and lasting over that period are incorporated in the projection.

¹⁷ Economic classification, classification by functions of the government (COFOG), classification by type, by organisation, by source, and classification under ESA95.

¹⁸ Compared to the ESA95 classification which is similar in substantive aspects but serves for the purpose of international comparison, the economic classification is more detailed, providing a more accurate picture of the development under the baseline scenario. Since a conversion table between the two classifications is in place, the resulting baseline scenario can also be converted into classification under ESA95.



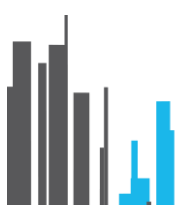
Scheme 1: Disaggregated general government balance



In preparing the baseline scenario, the CBR uses the following sources of forecasts and projections:

- demographic projections published by Eurostat (EUROPOP);
- macroeconomic forecasts by the Macroeconomic Forecasting Committee and long-term macroeconomic forecasts by the European Commission (EC);
- long-term forecasts of expenditure sensitive to population ageing calculated by the EC (namely expenditure on education, long-term care and unemployment);
- long-term forecasts of property income calculated by the EC;
- implicit liabilities and contingent liabilities (the data on the PPP project are adopted from a Ministry of Transport forecast¹⁹ and the forecasts of the impacts of the nuclear decommissioning scheme are adopted from a Ministry of Economy forecast);
- tax revenues forecasts prepared by the Tax Revenue Forecasting Committee; and
- own projections and assumptions (demographic projections included in the medium-term part of the baseline scenario, revenues and expenditures under a universal pension system and pension system of armed forces, health care expenditure).

¹⁹ The PPP project related payments, constituting input data for the baseline scenario, are based on a contract (between the private investor and the state) with a clearly defined method of their calculation.



1.2.2 Medium-term part of baseline scenario

The medium-term part of the baseline scenario covers the first four years of the projection. The rules for projecting revenues and expenditures are based on macroeconomic, demographic and other assumptions (part 1.2.2.1). Part 1.2.2.2 shows the rules defined for selected groups of revenues and expenditures.

1.2.2.1 Macroeconomic, demographic and other assumptions

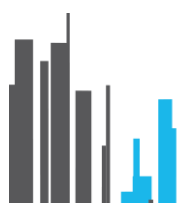
Macroeconomic assumptions of the baseline scenario should be based on the assumption of unchanged budgetary policies. Since there is no such official projection, it has to be derived. As a basis, the forecast of the Macroeconomic Forecasting Committee (MFC)²⁰ is used. Since the baseline scenario should not contain any new fiscal policy measures, the MFC forecast is adjusted for effects of such measures, yielding a basic macroeconomic projection that is then used in the baseline scenario. The MFC forecast contains compulsory indicators that are especially crucial in terms of tax revenue and social contribution forecasts, and a relatively large number of other indicators. The forecast is a good source of information for the baseline scenario because the Committee's operation and publication dates of its forecasts are defined in the constitutional Fiscal Responsibility Act, and clear-cut procedures to approve forecasts are defined in the statute of the Committee.

Demographic assumptions are also incorporated in the medium-term part of the baseline scenario. They are based on Eurostat projections; Eurostat regularly updates (every three years, usually) its population projections for all European Union Member States as part of an analysis of economic and budgetary implications of ageing populations. They are long-term projections extending until 2060 (Europop 2010). Since the Eurostat projection is based on the actual data of 2009, the CBR updated the actual data until the end of 2012. Assumptions from the Eurostat projection (fertility, mortality and migration) were then applied to the actual data.

Where revenue and expenditure items do not respond to macroeconomic and demographic developments, **other assumptions** need to be used. This namely involves the use of **the past year's actual data or an average for the past three years**²¹. Other alternative approaches used with respect to items that are known to reach zero values in the future involve the use of **zero values** or **gradually decreasing values** so that a zero value is reached in the last year of the medium-term part of the baseline scenario.

²⁰ It is an official forecast used in the budgetary process and also contains effects of measures that are necessary to meet budgetary objectives.

²¹ The choice between using past year's data or a three year average depends on the nature of a particular item. If the item tends to fluctuate over time (e.g. capital revenues, fines), average values will be used. However, when using average values, it is necessary to net out the impacts of legislative changes made in the past in order to correctly capture the development of a particular item.

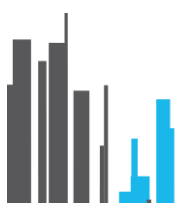


1.2.2.2 Selected groups of revenues and expenditures

- A. **Tax revenue and social security contributions** make up the most significant portion of general government revenue by volume. In the medium-term part of the baseline scenario, the majority of them are **based on a Tax Revenue Forecasting Committee (TRFC)²² forecast**. The forecast is adjusted for the effects of legislative changes that entered into force after the date of the baseline scenario preparation. As a rule, the list of changes is part of the general government budget and TRFC presentations. If updated effects are not available, they are estimated by the CBR. Subsequently, the forecast should be further adjusted for changes in macroeconomic assumptions (differences between the basic macroeconomic forecast and the MFC forecast) according to the relevant base of a particular tax²³.
- B. Another important group of items are **mutual transfers with state-owned corporations and other entities** established by the state, such as health care facilities, for example:
- On the revenue side, they particularly involve **dividends and profit levies** - from the macroeconomic point of view, the profitability can be estimated against the development in gross domestic product net of compensations of employees which is the approach used in the baseline scenario. However, they are specific companies, often operating in a regulated environment, and their profits may develop differently to macroeconomic assumptions. Therefore, a case-by-case approach could be applied in the future, provided the forecast of economic performance of major state corporations proves reliable.
 - On the expenditure side, they involve **current and capital transfers to those entities** (railway company, regional bus transport services, highway construction) and represent a contribution of the general government to their operations. Current transfers are supposed to cover operation of such corporations (or part of it), it means indexation by inflation rate and by wage growth in the private sector with equal weights have been chosen. For capital expenditure, the indexation is linked to a rate of growth in nominal GDP
 - **Health care expenditure** is a specific category; the CBR models a significant portion of the expenditure in the medium-part of the baseline scenario, as well. The modelling is based on health care expenditure incurred by health insurance companies and assumed liabilities of health care facilities which, taken together, give a picture of the actual expenditure incurred by hospitals. Other health care related expenditure, such as costs of administration and auxiliary activities of the Ministry of Health and health insurance companies, are indexed in line with the baseline scenario rules for individual types of expenditure in accordance with economic classification.

²² The forecast by the Tax Revenue Forecasting Committee represents input data for the preparation of a general government budget. The Committee's operation and publication dates of forecasts are specified in the constitutional Fiscal Responsibility Act. At the same time, clear-cut procedures to approve forecasts are defined in the statute of the Committee. An example of a tax revenue forecast can be found [here](#).

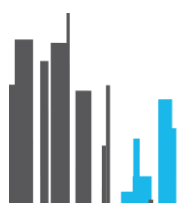
²³ Tax revenue forecast of the TRFC is based on the official macroeconomic forecast (prepared by the MFC) which contains the impact of measures needed to achieving budgetary objectives. The baseline scenario requires a tax revenue forecast based on unchanged policies. Therefore, the adjustment in macroeconomic scenario has to be reflected also in tax revenue forecast.



- C. **Interest revenues and interest expenditures** are projected **following the projection of gross debt and financial assets under the baseline scenario**. In the projection, the **gross debt** is affected by the general government balance during the projection period only, it means no impact of a stock-flow adjustment item is generally taken into consideration. In addition, the interest expenditures forecast is based on a MFC forecast of an average yield on ten-year government bonds. Debt instruments with variable interest rates and short-term instruments are not taken into consideration. Furthermore, the baseline scenario does not consider changes in a risk premium beyond macroeconomic forecasts. In terms of **financial assets**, they remain²⁴ at an unchanged level throughout the entire period covered by the baseline scenario. They have been divided by type to assets with a fixed (credits, loans, repayable financial assistance²⁵) and variable interest rate (deposits). For instruments with a fixed rate, the same yield is foreseen as in the previous year and it is assumed that their amount does not change. For instruments with variable rates, the projection incorporates the effect of a change in the forecasted average interest rate on deposits.
- D. **Projection of EU funds drawing** takes into account the total allocation available to Slovakia, the **assumption as to whether such funding is likely to be drawn within the programming period**, as well as the **previous disbursement pattern** which may be applied to individual programming periods.
- Special attention is paid to the projection in the last year of the medium-term part of the baseline scenario. Even though the actual drawing of financial resources from the EU may fluctuate considerably over time, the average projected amount of drawing must be used in the last year. This has to do with the fact that, in the long term part, the projection rules will become markedly simpler while preserving the same proportion of such revenues and expenditure to GDP over the entire period. Projection of **expenditures on co-financing** of these projects assumes the same co-financing rate (expressed in proportion to overall receipts from the EU) as that based on last year's actual data.
- E. **Expenditure on wages and social contributions** is indexed on the basis of the trend projected in private sector wages. This is due to the fact that a slower growth in wages in the public sector compared to the private sector would increase people's motivation to get jobs in the private sector and vice-versa. Therefore, the same developments in both sectors of the economy should not bring potentially negative distributive effects. In the projection of these expenditures, an unchanged employment rate in public administration is envisaged.
- F. **Expenditure on goods and services** is indexed on the basis of the projected trend in inflation rate. The assumption used in the determination of this rule was that the actual level of purchased goods and services will remain the same over time.

²⁴ An exemption would be a hypothetical situation when the gross debt would fall to zero during the baseline scenario projection period and continued general government's surpluses would lead to an increase in financial assets.

²⁵ This is a simplified assumption, since these instruments may have variable rates. Due to the time and data intensity, the CBR did not examine these assets individually.



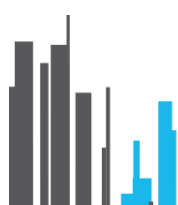
- G. **Current transfers in the social security system** (state social benefits, social security benefits²⁶, social contributions paid by the state) take into account the indexation rules governed by specific legislation. In the case of other benefits where the amount is determined by the government (i.e., those that are not indexed automatically), the same indexation as that applied to other similar benefits is assumed.
- H. **Other current transfers** which are used to finance, in particular, the current expenditure of organizations (wage costs and expenditure on goods and services). This includes, for instance, the financing of schools, churches and other entities. If data on the ratio between such expenses is available, it is used as the basis for determining the weights for indexation based on private sector wages and the inflation rate. In the event that such data is not available, the same weights of both indicators are assumed for indexation purposes.
- I. **Capital expenditure** is indexed on the basis of nominal GDP growth, thus ensuring a constant ratio of general government investments to GDP²⁷. In the event that the sources for the financing of such expenditure (taxes in particular) grow at a slower pace, one might argue to consider a slower growth of capital expenditure to prevent their financing from loans. However, this case would imply an implicit intervention of the government (expenditure responding to the amount of revenues), which could no longer be considered a no-policy change scenario.

1.2.3 Long-term part of baseline scenario

The long-term part of the baseline scenario covers the **period from the 5th to the 50th year of the projection, with items of the balance and rules showing a lower level of detail in comparison with the medium-term part**. The projections focus on selected groups of revenues and expenditure related to population ageing (pension system, expenditure on healthcare, long-term care, education and unemployment) and other implicit liabilities (PPP projects, nuclear decommissioning scheme), in which case a model-based approach is also used along with projections based on simple rules.

²⁶ The only exception are old-age pensions under the universal pension system and post-service pensions in the armed forces and police corps, which are projected on the basis of CBR's models.

²⁷ The assumption is that the stock of capital relative to GDP remains the same. In addition to new investments, the stock of capital is also affected by depreciation (consumption of fixed capital) which is not part of the general government balance under ESA95 and in respect of which there is no estimate for the entire period of the baseline scenario. Simply put, in order to maintain the same level of the stock of capital, investments and depreciation would have to remain the same during the relevant year. However, this is not the case at present due to different trends in investments and depreciation (over the last decade, the amount of depreciation has always exceeded the amount of investments) and, therefore, the stock of capital may fluctuate in the medium term. In the long term, however, maintaining the investment-to-GDP ratio at a constant level will cause the depreciation-to-GDP ratio to remain constant as well; therefore, the stock of capital will not change over time (albeit its level will be different from that seen in the baseline year). In the future, the CBR also intends to incorporate depreciation-related information in the rule concerning the development of capital expenditure (provided that such depreciation can be reliably estimated), so that the stock of capital would be the same as in the baseline year throughout the entire period.



1.2.3.1 *Macroeconomic and demographic assumptions*

The **projections of the European Commission** are available for most of the period covered by the long-term part of the baseline scenario. Macroeconomic assumptions are based on the **long-term macroeconomic projections** concerning the impact of population ageing on the public finance until 2060, which are regularly updated (once in three years and whenever a Member State undertakes a significant reform). The estimates of the effects of population ageing also include **demographic projections** which are regularly updated as well, with their latest version published in 2011 (Europop 2010).

Because these projections are available until 2060 although the current baseline scenario covers the period until 2063, it was necessary to extend them. For the above three-year period, individual indicators are assumed to retain the same dynamics as in 2060. In the future, the projections should be extended beyond the scope of the Commission's projections by using the CBR's own projections which have been prepared for the purposes of generational accounts until as late as 2150.

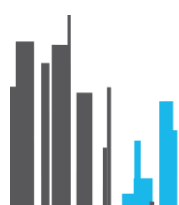
1.2.3.2 *Projection of the effects of an ageing population*

The long-term part of the baseline scenario includes the following²⁸ projections of revenues and expenditure related to population ageing:

- **Pension system** - the pension system of Slovakia consists of the **universal system** administered by the Social Insurance Agency (the pay-as-you-go pillar) and by pension asset management companies (the fully-funded pillar) and of the **pension scheme of the armed forces and police corps**. For the long-term projections of both systems, the CBR uses its own models²⁹.
- **Healthcare** - for the purposes of the long-term simulation of healthcare expenditures sensitive to demographic changes, the CBR uses its own model based on micro-simulation, i.e., modelling the expenditures of individual persons. The model also captures the effect of the so-called death-related costs. The costs of healthcare provision are several-fold higher during the final years of life than during the healthy lifetime and their correct projection is therefore a key to creating the most accurate simulation possible for the overall expenditure.
- **Long-term care, education, unemployment benefits and property income** - at present there are no CBR models containing the projection of these revenues and expenditures. For this reason the baseline scenario reflects the long-term projections of the European Commission. Depending on how these items were identified in the actual revenue and expenditure balance (directly identifiable, an estimate using a related classification), either the values or the dynamics of the individual items were taken from the balance.

²⁸ The list and definition of these items are based on the methodology of the European Commission's Ageing Working Group, within which the projections of the individual items are approved as well.

²⁹ A detailed description of these models will be part of working papers which are being prepared.



Tab 2: Implicit liabilities related to population ageing in the baseline scenario

Items related to population ageing	Actual balance - identification	Medium-term part	Long-term part
Universal pension system	ECBC and its parts		CBR model
Pension system of armed forces	ECBC and its parts		CBR model
Healthcare expenditures (part sensitive to population ageing)	ESA95		CBR model
Long-term care expenditures	ECBC		EC projection
Education expenditures	COFOG	rules defined by CBR	rate of growth in the EC projection
Unemployment related expenditures	ECBC	rules defined by CBR	rate of growth in the EC projection
Property income	ESA95	rules defined by CBR	rate of growth in the EC projection

Note: ECBC – economic classification of budget classification

Source: CBR

Box 1 : Healthcare expenditures model

For the purposes of the long-term simulation of healthcare expenditures sensitive to demographic changes, the CBR uses its own model that underwent **two significant changes since the last year's report**.

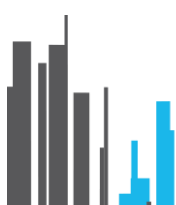
The first change entails a shift from age- and gender-based cost profiles, which were adjusted on the basis of life expectancy between the years covered by the simulation, towards microsimulation, i.e., **modelling the expenditures of individuals based on their characteristics**. For this purpose CBR uses representative sample of individuals provided by the Ministry of Health of the Slovak republic.

The second change enhances the model by introducing the effect of the so-called **death-related costs (DRC)**. The costs of healthcare provision are several-fold higher during the final years of life than during the healthy lifetime and their correct projection is therefore a key to creating the most accurate simulation possible for the overall expenditure, which also reduces the impact of population ageing on healthcare expenditures.

1.2.3.3 Other implicit and contingent liabilities

The inclusion of implicit and contingent liabilities in the baseline scenario is important because, even though they might not necessarily have a significant impact on the general government balance and debt under the ESA95 methodology at present, their effect in the future could be substantial. Namely, the baseline scenario now includes liabilities from the **existing PPP project** and the **nuclear decommissioning scheme**:

- **Implicit liabilities under the PPP project** are based on the Government's decision to finance the construction of motorways in cooperation with the private sector. From the perspective of general government, the balance and debt are not affected at the time



when the decision is made or during the construction itself – the effect spans over the period during which the PPP project is gradually repaid. The baseline scenario takes into account the projection of future payments by the state.

- **The nuclear decommissioning funding scheme** reflects the objective requirements and needs that are related to the liquidation of nuclear facilities and spent fuel. The size of costs in the future largely depends on the timetable for the decommissioning of individual units and the selected method of liquidation. Future expenditures should be funded from purpose-specific contributions paid by nuclear operators and distribution companies which are continuously accumulated in the National Nuclear Fund (a general government entity). The baseline scenario therefore takes into account the projection of revenues and expenditure related to this scheme.

1.2.3.4 *Other components of the balance*

As regards other items, a simplified approach has been applied in the long-term part of the baseline scenario instead of the model-based approach:

- **Debt interest payments** are based on the projection of the debt that is affected solely by the general government balance. For the purposes of estimating the debt interest payments, interest rates envisaged in the Commission’s macro-economic projection have been used as the source of data. As is the case with the medium-term part, the debt is expected to mature in 10 years, with no changes envisaged in risk premiums due to the given development of the debt (which may reach unsustainable levels during the period of the baseline scenario).
- **Other items of the revenue and expenditure balance of the general government** are governed by a uniform rule which maintains their equal share in GDP throughout the entire long-term part of the baseline scenario (growth in line with the nominal GDP growth rate). This means that such items are not generating additional pressure on public finances beyond the scope of population ageing effects and other implicit liabilities.

1.2.4 **Link between medium-term and long-term part of baseline scenario**

Due to the diversity of input assumptions and items of the balance in the individual parts of the baseline scenario, it was necessary to link the medium-term part and the long-term part in a consistent manner.

Macro-economic assumptions were linked by **capturing the trend in Commission’s projections** which was applied to the medium-term scenario levels. The exceptions are the assumptions concerning interest rates, in which case no transition between the individual parts has been applied (despite a relatively substantial change between the last year of the medium-term part and the first year of the long-term part). The reason is that changes in interest rates affect the debt interest payments only gradually, because there is only a certain part of the debt revaluated in the given year (given the 10 year maturity of debt).

Consistency of **demographic assumptions** was ensured throughout the entire baseline scenario by applying Eurostat’s assumptions in both parts of the baseline scenario.



In terms of **individual items of the revenue and expenditure balance**, a special approach was required only in the case of linking those items which are not modelled by the CBR. This involves expenditure on education, unemployment expenditure and property income. In order to ensure their linkage, the growth rate envisaged in the Commission's projections has been applied and their identification in the medium-term part was performed on the basis of the economic classification. In other cases consistency is ensured either by using projections for the entire baseline scenario or by defining rules determining the dynamics of individual items in different parts of the baseline scenario.

1.3 Annex – The 2013 baseline scenario

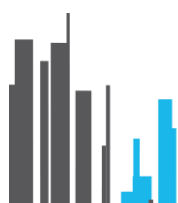
The baseline scenario with a starting year of 2013 was the first one compiled using the methodology described in this discussion paper. Table 3 shows the detailed breakdown of revenues and expenditures in the baseline scenario.

Tab 3: The 2013 baseline scenario (% GDP)

	2013*	Medium-term scenario					Long-term projections				
		2014	2015	2016	2017	2020	2030	2040	2050	2063	
Total revenues	35.1	35.4	34.4	33.4	33.2	33.1	33.0	33.1	33.2	33.2	
Tax revenues	15.9	16.0	15.4	15.3	15.0	15.0	15.0	15.0	15.0	15.0	
Social and health sec. contributions	13.8	13.6	13.5	13.5	13.4	13.3	13.3	13.5	13.7	13.8	
- Fully funded pillar including	14.1	13.9	13.8	13.7	13.7	13.7	13.7	13.7	13.7	13.7	
- Soc. security of armed forces	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
- Shortfall of fully funded pillar	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	-0.5	-0.3	-0.2	
Grants and transfers	2.7	3.1	2.8	2.2	2.3	2.3	2.3	2.3	2.3	2.3	
Non-tax revenues	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.3	2.2	2.1	
- Other non-tax revenues	1.7	1.6	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
- Property income	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	
- Contributions to NNF	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	
Total expenditures	38.7	38.6	38.2	37.1	37.1	37.4	39.0	41.0	44.5	50.8	
Primary expenditures	36.7	36.6	36.3	35.1	35.1	35.0	35.0	35.3	36.3	37.6	
Fixed	17.9	17.7	17.4	16.3	16.4	16.4	16.4	16.4	16.4	16.4	
Sensitive to population ageing	18.6	18.7	18.6	18.5	18.5	18.4	18.4	18.7	19.8	21.1	
- Old-age and disability pensions	8.3	8.4	8.3	8.3	8.3	8.2	7.8	8.2	9.0	9.7	
- Armed forces	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	
- Healthcare	5.2	5.3	5.3	5.4	5.4	5.5	6.0	6.1	6.4	6.7	
- Long-term care	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.7	
- Education	4.1	4.1	4.0	3.9	3.9	3.8	3.7	3.4	3.5	3.6	
- Unemployment benefits	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
Decommissioning of nuclear plants	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
PPP projects	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	
Transfers to political parties	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Interest payments	2.0	1.9	1.9	1.9	2.0	2.4	4.0	5.7	8.2	13.2	
GG balance	-3.5	-3.2	-3.8	-3.6	-3.9	-4.3	-6.0	-7.9	-11.2	-17.5	
GG primary balance	-1.6	-1.2	-1.9	-1.7	-1.9	-1.9	-2.0	-2.2	-3.1	-4.3	
GG debt	55.4	56.6	57.8	58.4	59.0	61.9	82.2	116.1	166.7	269.1	

* net of one-offs

Source: CBR



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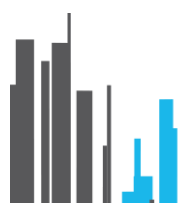
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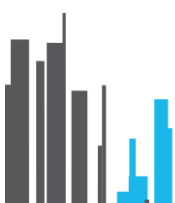
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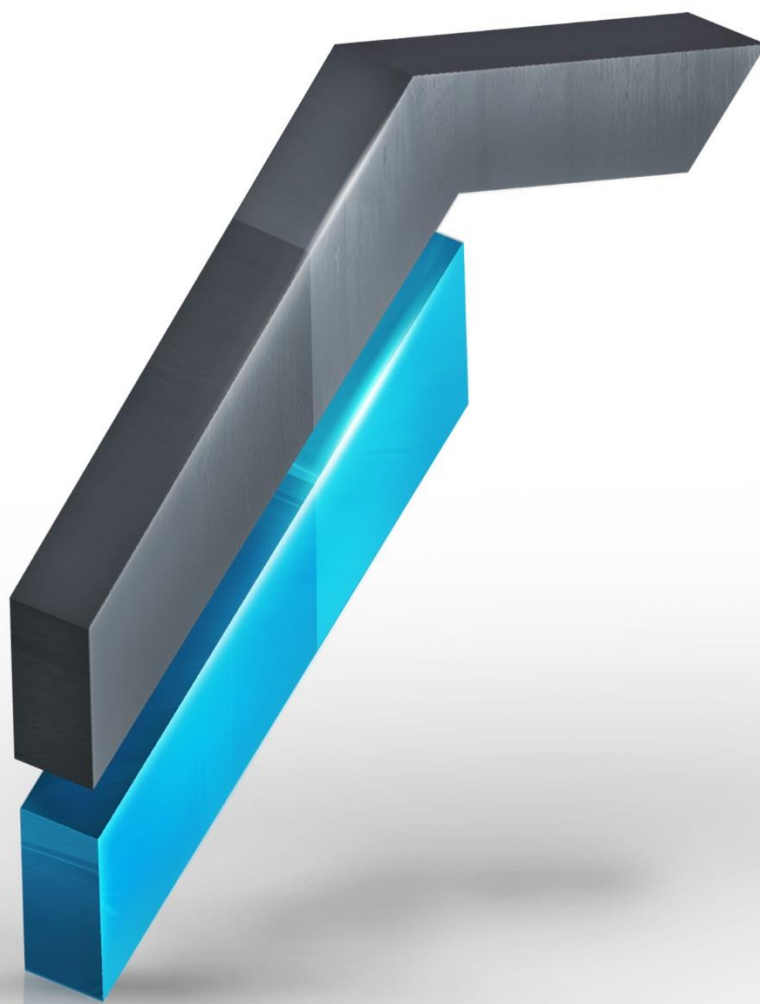
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2 Issues for discussion

- In compiling indicators derived from the baseline scenario, the manner in which the baseline scenario is evaluated against the actual data (ex-post assessment) plays an important role as well. During the evaluation, the actual development in individual items may be different from their development according to the rules defined in this document in the absence of any impact of government's measures. The difference might be attributed to government measures, the degree of simplification of the rule applied and the impossibility to precisely quantify the impacts of government's measures. What would be the best approach to the ex-post assessment?
- The indexation of several expenditure items in the medium-term part of the scenario follows customary practices and past experience with the given item. The expenditures on goods and services are linked to inflation rate, current transfers covering operational expenditures are linked to both the inflation rate and wage growth and capital expenditures are growing at the rate of GDP growth. What is your opinion on this approach?
- One of the important items in the balance is the EU funds projection. It takes into account the total allocation available to Slovakia, the assumption as to whether such funding is likely to be drawn within the set time period, as well as the previous disbursement pattern. Is there an alternative way of projection? What other factors should be taken into account in EU funds projection?





**Council for Budget
Responsibility**

Imricha Karvaša 1
Bratislava 1
813 25
Slovakia