

Fiscal Space Analysis

A basic overview of the model



Preface

In the context of Ecorys' contract with UNICEF entitled 'National Political Economy Analysis and Fiscal Space Profiles of countries in the Eastern and Southern Africa Region', Ecorys developed a Fiscal Space Analysis methodology and model to be used in 17 countries to formulate fiscal space projections.

This document aims to provide a brief introduction to the model designed for formulating such fiscal-space projections. It demonstrates how the model works and what it can and cannot do. In addition to this document, an elaborate User Guide has been developed. To get further understanding of the set-up of the model and to be able to use the model, it is highly recommended this Guide will be used.

Outline

1. [Introduction](#)
2. [Frequently Asked Questions \(F.A.Q.\)](#)
3. [The definition of priority expenditure](#)
4. [The description of the fiscal space equation](#)
5. [An overview of the worksheet](#)
6. [Some examples and tips on the functioning of the excel worksheet](#)

Fiscal Space Analysis

A basic overview of the model

Introduction

The scope of the model

The “broad” scope of the model is to calculate what are the consequences *of an increase in expenditure of “child-friendly” policies on government finances.*



+ Investment in child related policy

impact



Government finance (debt, internal borrowing, etc..)

Examples of questions the model tries to answer...

- 1) If the government hires 20% more teachers, what would be the consequences on government deficit and government debt?
- 2) Can we build more hospitals without increasing government deficit?
- 3) If we increase the efficiency of tax collection, can we increase expenditure in social protection without increasing the government deficit?

How this is put in practice...

We use a macroeconomic model that ***projects macroeconomic variables and budget expenditure for the next 5 years.***

Those projections are based on the assumption that the “structure” of the economy will not change.

These assumptions give us the projections for the ***base scenario.***

Then we look at a few ***alternative scenario*** in which some of those assumptions will change (according to which “question” we want to answer).

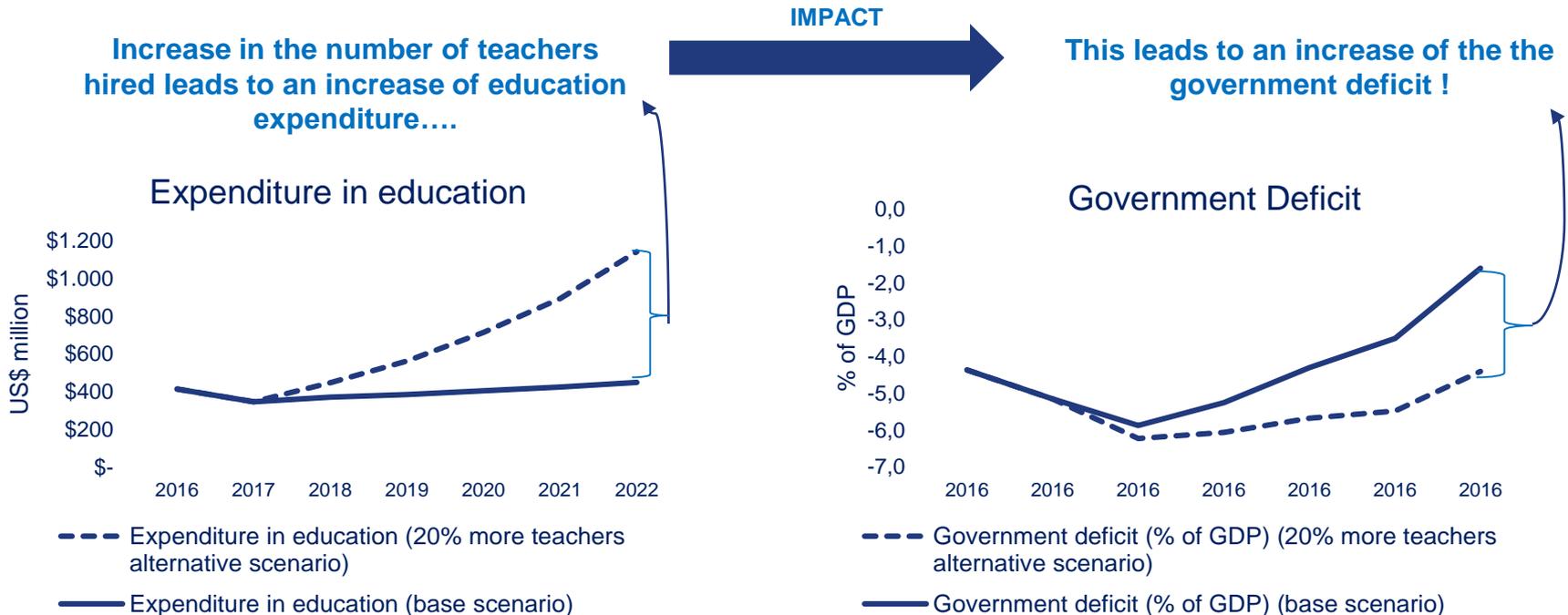
For example...



Example 1: increased education expenditure

A) In the base scenario, the structure of the economy does not change.

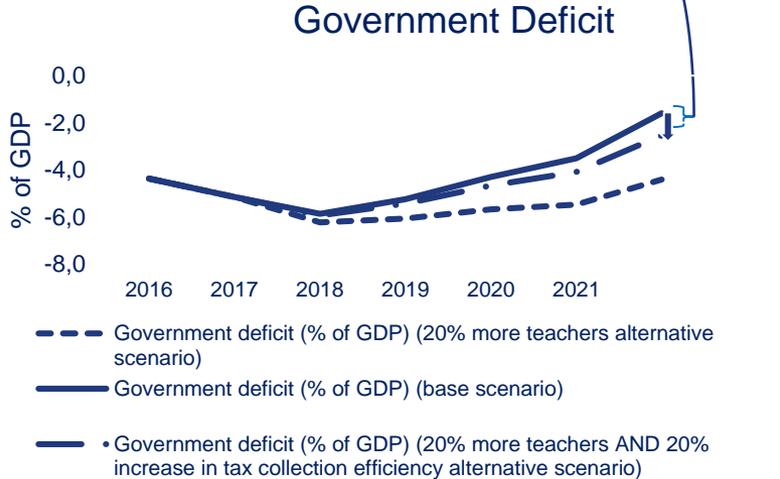
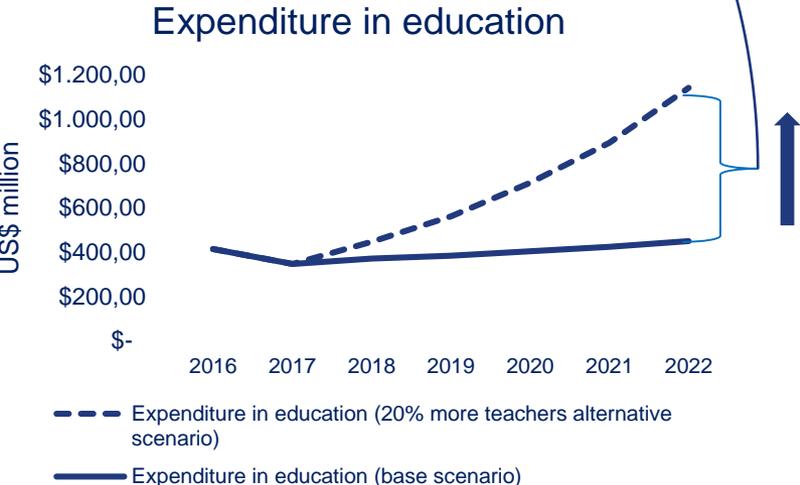
B) In the alternative scenario, the structure of the economy does not change, except for the number of teachers hired which increases by 20% each year.



Example 2: increased education expenditure AND increased tax revenue

A) In the base scenario, the structure of the economy does not change.

B) In the alternative scenario, the structure of the economy does not change, except for the number of teachers hired which increases by 20% each year AND tax collection efficiency which increases by 20%.



Of course, the model is a bit more complex than this !
For a more detailed explanation we suggest to read the FSA
report of your country and the manual of the model.

Fiscal Space Analysis

A basic overview of the model

Frequently asked questions (FAQs)

FAQs

1. What does the model do?
2. Does the model produce forecasts?
3. Is it a general equilibrium model?
4. How can the model be used?
5. Does the model consider off-budget aid and expenditure?
6. What are the assumptions of the base scenario of the model?
7. Does the model consider an increase in efficiency or quality?
8. Does the model calculate the impact of investments in social sectors?

1. What does the model do?

Under a set of fiscal programming and macroeconomic assumptions, the model will calculate the additional internal borrowing needed to finance priority expenditure. In other words, the projection exercise is a programming exercise intended to determine whether future fiscal-space flows are likely to be able to cover future priority-expenditure requirements.

The fiscal space equation is described [here](#), explaining how the calculation is made).

2. Does the model produce forecasts?

All the projection results are based on specified, quantitative “programming” assumptions. They are not intended, and should not be understood, as forecasts, but rather as plausible possibilities for planning purposes. In particular, the growth rates of government expenditure are intended as plausible policy settings.

3. Is it a general equilibrium model?

Our projection exercise is a different kind of exercise from a general-equilibrium model. It is an accounting consistency framework. As such, it is not so sophisticated as a general-equilibrium model.

The model should not inform macro-economic planning, but should be rather seen as a fiscal impact tool, a sort of litmus test to see the impact on the state's financing needs when a given policy is implemented.

4. How can the model be used?

The model can be used to test the budgetary consequences of different scenarios, with different sets of assumptions regarding the evolution of priority expenditure and possible options to increase different sources of funding (tax, grants, higher growth etc..). The model first calculates what will be the “fiscal gap” when priority expenditure is sustained or increases, and then assumes various scenarios to see how various measures (partly) fill this “gap”, i.e. to increase the fiscal space.

The model is designed to be used by UNICEF to formulate projections, which can potentially be used in discussions with the government about budgetary issues. The model does not replace any tool available within the government, it presents a complementary tool to the existing ones.

5. Does the model consider off-budget aid and expenditure?

The model takes into account only the expenditure that enters into the government budget. Thus, it does not consider off-budget aid or off-budget expenditure.

6. What are the assumptions of the base scenario of the model?

The GDP growth is set considering past performance and projections made available by the Government and International Financial Institutions (mainly the IMF).

Most of the remaining programming assumptions are intended as “neutral”, non-controversial, base-line assumptions that would produce no significant changes in the fiscal structure as the real economy grows. A detailed list of the assumptions for each model can be found in the “Assumption notes” and “Assumption sheet” contained in the workbook of the model.

7. Does the model consider an increase in efficiency or quality?

Yes, the model can simulate the budgetary consequences of increased **efficiency**:

- on the revenue side, the model can calculate a scenario which assumes an increase in tax collection efficiency;
- on the expenditure side, the model can calculate a scenario which assumes higher expenditure efficiency, i.e. higher absorption rate.

However, the model does not consider the “**quality**” of the services delivered (quality and efficiency of education system, health service delivery, etc..). In other words, the expenditure is only evaluated in “monetary” terms: increased efficiency of expenditure means a higher absorption rate of resources, but does not necessarily mean increased efficiency or quality in service delivery.

8. Does the model calculate the impact of investments in social sectors?

The model does not take into account potential gains from investments in education, health or social protection. It does not have “multiplier” effects: for example, it does not show human capital gains from investments in education, or impact of increases in the health budget on a population’s health. As noted in on the previous page, the model only calculates fiscal effects.

Fiscal Space Analysis

A basic overview of the model

The definition of priority expenditure

What is priority expenditure ?

Priority expenditure is defined as expenditure that is beneficial to children. The definition of “priority” could be broad (e.g. education, health and social welfare), very specific (e.g. birth registration, HIV/AIDS, pre-primary education) or a combination of both; the selection should be based on current country office priorities as well as on the availability of expenditure data, which may not allow a more specific approach.

The definition of priority expenditure is always arbitrary: as expenditure defined as ‘non-priority’, such as infrastructure, also (indirectly) benefits children.

Priority expenditure is defined *a priori* (in agreement with the UNICEF country office) for each study.

Examples of 'priority expenditure'

The total priority expenditure could comprises..

Option 1: The total of the expenditure from the Ministry of Health, Education, Social Protection (priority expenditure based on administrative classification);

Option 2: The total of the expenditure of all programmes related to Health and Education (priority expenditure based on programme classification);

Option 3: The total expenditure in the Education, Health, Nutrition sectors (priority expenditure based on functional classification).

The definition depends on:

- Availability (and depth) of the data;
- UNICEF preference;
- Country context.

Fiscal Space Analysis

A basic overview of the model

The fiscal space equation

The fiscal space equation

When the priority expenditure has been defined, we assume this expenditure is financed in the following way:

Priority expenditure =

- Non-priority expenditure
- External debt service
- Internal interest expenditure



**Decrease the funding of
priority expenditure**

- + Tax and non-tax revenue
- + External grants
- + External debt disbursements
- + Net internal financing flows



**Increase the funding of priority
expenditure**

How the model calculates the additional internal borrowing (= the “fiscal gap” to fund priority expenditure)

Priority expenditure =

- Non-priority expenditure
- External debt service
- Internal interest expenditure

Decrease the funding of priority expenditure

- + Tax and non-tax revenue
- + External grants
- + External debt disbursements
- + Net internal financing flows

Increase the funding of priority expenditure

Calculated residually

Defined by programming assumption

How the model calculates the additional internal borrowing

The base scenario

Thus, if we assume an increase of priority expenditure...

→ +

Priority expenditure =

...given that the other entries are defined by programming assumptions (and stay equal)...

=

- Non-priority expenditure
- External debt service
- Internal interest expenditure
- + Tax and non-tax revenue
- + External grants
- + External debt disbursements

...the net internal financing flows need to adapt (increase) !

→ +

+ Net internal financing flows

How the model calculates the additional internal borrowing

What alternative scenarios can do

We assume an increase of priority expenditure...



+

Priority expenditure =

- Non-priority expenditure
- External debt service
- Internal interest expenditure
- + Tax and non-tax revenue**
- + External grants
- + External debt disbursements

...we change one of the assumptions: for example, we assume an increase in tax revenues as compared to the base scenario...



+

+ Net internal financing flows

...the net internal financing flows will decrease (= the fiscal “gap” will become smaller or disappear)!



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Fiscal Space Analysis

A basic overview of the model

An overview of the Excel worksheet

Letter notation explanation

A Priority expenditure =

B - Non-priority expenditure

C - External debt service

D - Internal interest expenditure

E + Tax and non-tax revenue

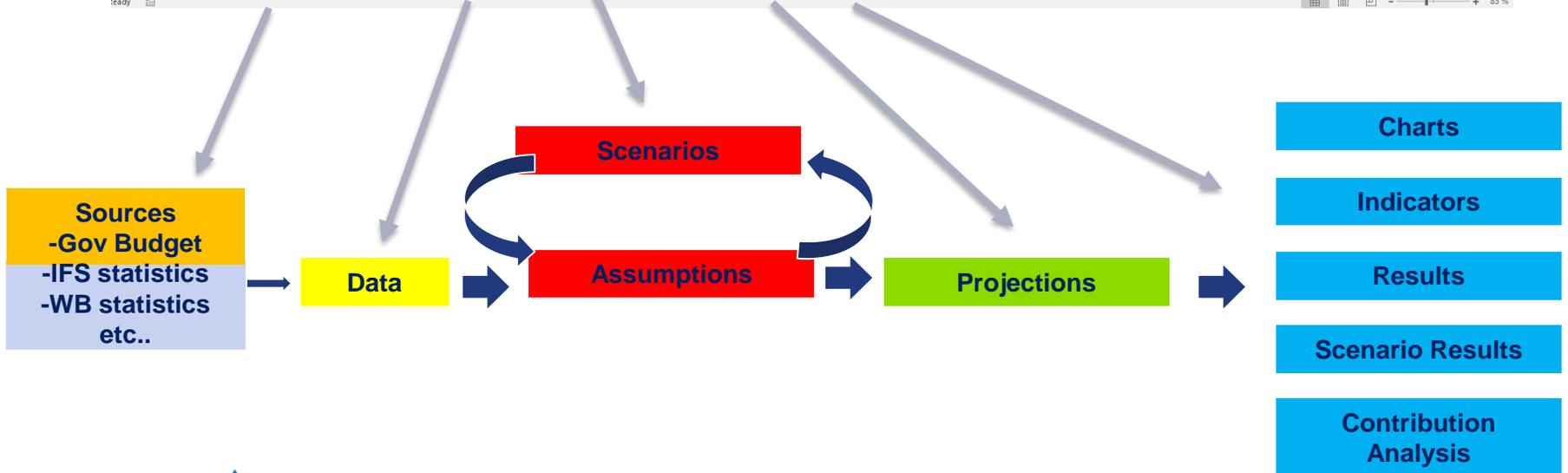
F + External grants

G + External debt disbursements

H + Net internal financing flows

$$\begin{array}{ccc} \uparrow \downarrow & \mathbf{A} = \underbrace{\mathbf{-B-C-D+E+F+G}} & \underbrace{\mathbf{+H}} \uparrow \downarrow \\ & \text{Calculated by the assumptions} & \text{Calculated} \\ & \text{"fixed"} & \text{residually} \\ & & \text{"variable"} \end{array}$$

Structure of the worksheet (1)



Structure of the worksheet (2)

6) The **projections** are sent to the **results** worksheet. The results, **scenario results**, **contribution analysis**, **charts** and **indicators** summarize the **results** of the calculations

2) The statistics of the “orange/violet table” are summarized in the **data** worksheet that is used as the “input” of the model

4) The **scenarios** worksheet contain the assumptions that change in the various scenarios (those that are **highlighted in green** in the **assumptions** worksheet), and “ sends it” back to the **assumptions** worksheet.

Sources
-Gov Budget
-IFS statistics
-WB statistics
etc..

Data

Scenarios

Assumptions

Projections

Charts

Indicators

Results

Scenario Results

Contribution Analysis

1) The “orange” and violet table at the left of the **data** worksheet contains all the statistics coming from various sources.

3) The data from “data” worksheet goes into the **assumptions** worksheet. Using past data, assumptions are made for projection years.

5) The **assumptions** are used to calculate the values for the **projections**.

Fiscal Space Analysis

A basic overview of the model

**Some examples of working with
the model**

Example 1: change the value units

The user may want to visualize the results in a different unit (% of GDP, US dollar, national currency), or to use different accounting years (fiscal/calendar). In this short video we show how to do this...

[CLICK HERE FOR VIDEO](#)

Example 2: view a different scenario

If you want to see the results of different scenarios, ... etc.

[CLICK HERE FOR VIDEO](#)

Example 3: change assumptions

You may want to change some of the assumptions of the existing scenario.

For example, *to test what happens when the efficiency in tax collection decreases (or increases).*

Or *what happens if the real growth rate departs (increase or decrease) from the current assumptions.* Those changes can be made in just few seconds!

[CLICK HERE FOR VIDEO](#)