

TIMES Fix Initial Periods (FIXBOH) Option in ANSWER-TIMES

Introduction

The purpose of this note is to briefly describe how to invoke the TIMES Fix Initial Periods (FIXBOH) option in ANSWER-TIMES.

For an explanation of the TIMES Fix Initial Periods (FIXBOH) option, see section 6.1 of TIMES Version 2.8 User Note "User Control Switches in TIMES" (author Antti Lehtila), which can be downloaded from the ETSAP website as *TIMES-Control-Switches.pdf*.


The demonstration database Example4-v661.mdb (distributed with ANSWER-TIMES version 6.6.1 and higher) allows Run Model using the TIMES Fix Initial Periods (FIXBOH) option to be undertaken. This is detailed below.

Fix Initial Periods (FIXBOH) option in ANSWER-TIMES


The essence of what is required by the ETSAP TIMES GAMS code is to specify values for:

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|----------|---|
| FIXBOH | the year up to which the model solution (for the current run) will be fixed to a previous solution |
| run_name | the name of a previous run, from which the previous solution mentioned above is to be retrieved (either a full GDX file or a GAMS "point file") |

This means that prior to undertaking Run Model using the FIXBOH option, you must have previously used Run Model to carry out a run in which you saved solution information to a GDX file.

- For the demonstration database Example4-v661.mdb, it is suggested that you use the  button on the Run Model form to select Run (Case) **EX4-5PER** and then carry out a run of **EX4-5PER**, *making sure that the Default Basis Save File option is selected*, so that GDX file EX4-5PER.gdx will be created on your computer in folder C:\AnswerTIMESv6\Gams_Wrkt\gamssave:



(Run EX4-5PER is a run of the BASE scenario for 5 periods from 2000 to 2050, as can be verified by clicking on the  button.)

Once you have carried out Run Model saving solution information to a GDX file, you are in a position to undertake Run Model using the FIXBOH option to fix the solution in initial periods to the solution in the GDX file.

- For the demonstration database Example4-v661.mdb, suppose that you want to carry out Run Model with the intention of solving out to 2080, while fixing the solution in the initial periods up to and including 2020 to the solution obtained for Case (Run) **EX4-5PER**.

- To see the Model Variant settings that are required for such a run, use the **Change Run...** button on the Run Model form to select Run (Case) **EX4-FIXBOH-5**, and then click on the **Specify Model Variant...** button, to display the Model Variant Specification form:

To achieve these settings if starting from a Model Variant Specification form with Model Variant Description of Standard TIMES, you would need to proceed as follows:

1. Check the Fix Initial Periods (FIXBOH) checkbox.
2. Specify the value for FIXBOH of **2020** in the 'Fix Up To' textbox.
3. Use the **Browse...** button alongside the 'Restart GDx File' textbox to select the GDx file (in folder C:\AnswerTIMESv6\Gams_WrkTI\gamssave) with run_name of **EX4-5PER** from which the previous solution is to be retrieved. (The GDx file that is generated has upper case name of **EX4-5PER**, but ANSWER changes this to lower case.) Alternatively, you could use the **Browse...** button to select the GDx "point file" whose name is **ex4-5per_p**, instead of selecting the GDx file **EX4-5PER**.

Click on the [OK] button on the Model Variant Specification form to return to the Run Model form, and note that the choice of 'Restart GDx File' is reflected in the GAMS Basis Restart File setting of the Run Model form:

- After clicking on the **Specify Milestone Years** button to verify that all periods from 2000 to 2080 are indeed specified, click on the [OK] button of the Run Model form to carry out Run Model using the FIXBOH option.
- ANSWER-TIMES then ensures that FIXBOH is specified as a control variable in the GEN file that controls the TIMES GAMS model run, by inserting:

\$SET FIXBOH 2020

and that the run_name of **ex4-5per** is specified, by inserting in the GEN file (lower down):

\$SET LPOINT 'ex4-5per'

This can be seen by opening the file EX4-FIXBOH-5.GEN with a text editor.

ANSWER-TIMES supports use of the REG_FIXT Data Parameter in conjunction with the FIXBOH option. This parameter may be specified via the AddRow on the Parameter tab. Alternatively, it may be specified via the AddRow on the Global tab (when selected region is not _GLOBAL).

The TIMES Fix Initial Periods (FIXBOH) Option is available in conjunction with most of the other TIMES Model Extensions.