How To Read Results in the GDX File

The UNI-CGE model reports results in a GDX file. This guide shows you where to locate the file, its contents, and how to export results to Excel.

CONTENTS

1.   WHAT IS A GDX FILE?

GDX stands for Gams Data eXchange. A GDX file stores and displays data that are defined in the CGE model. For example, it can store the values of parameters such as elasticities and tax revenues if these have been defined and given values in the CGE model. GDX files are also used to hold data used as model input, such as the SAM GDX file in the UNI-CGE model. A GDX file can also hold data that result from a successful model solution. In this course, results are reported in a GDX file named UNI-RESULTS.GDX.

2.   WHERE IS THE UNI-RESULTS.GDX FILE?

The UNI-RESULTS.GDX file will be created every time you run the model, if you have set GAMS to do so. The first time you run the model, click on the green arrow and select "Run with GDC Creation," as shown in Figure 1.

Figure 1. Set GAMS to create a GDX results file after running the model
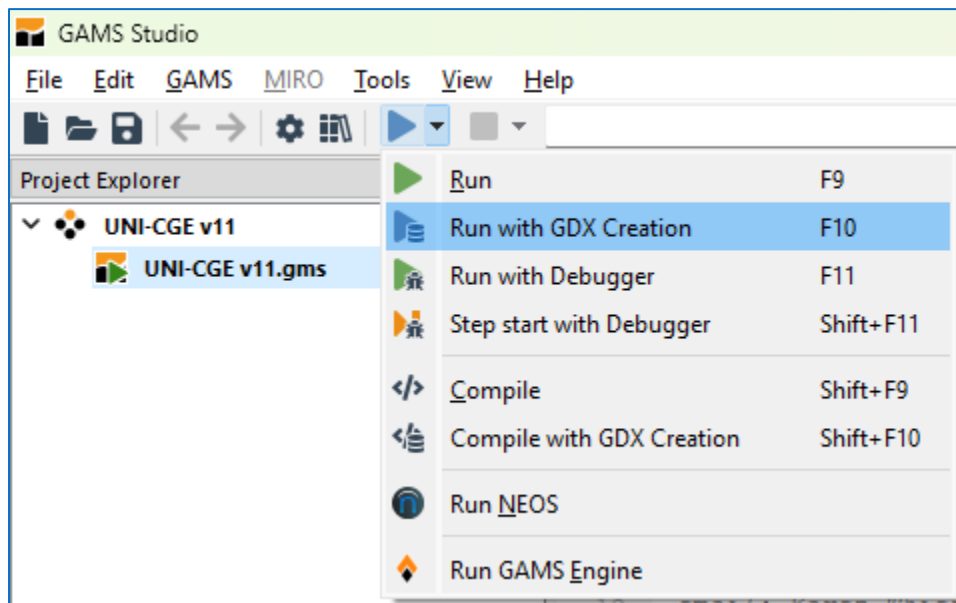
After you run the model, the UNI-RESULTS.GDX file will appear on the Project
Explorer list. Click on its name to open it.

After you open it, the file name will appear on the menu bar (Figure 2). You can
leave the file open, and results from subsequent experiments will constantly
overwrite it.

Figure 2. UNI-RESULTS.GDX listed on the menu bar
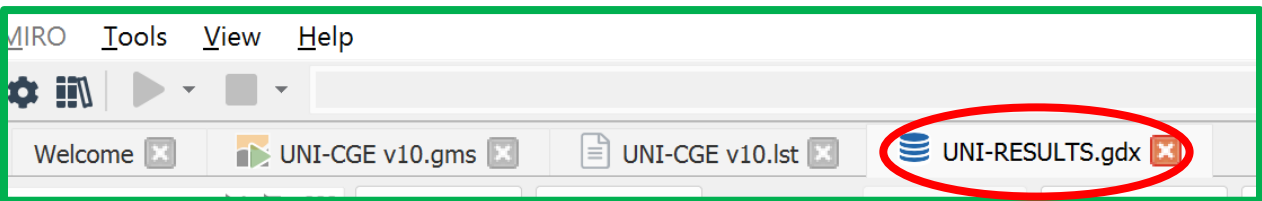
3.   WHAT IS IN THE UNI-RESULTS.GDX FILE?

The GDX file reports the solution values for selected variables and parameters in the
model. Figure 3 presents a snippet of the UNI-RESULTS.GDX file.

**Figure 3. Example of the contents of the UNI-RESULTS.GDX file**

Clicking on the name of an item in the left-hand column opens the data for that item
in the right-hand section of the screen. In Figure 3, the modeler had previously

created and defined a parameter named "RES_PCOM_PC" in the UNI-CGE model code. It is a table of **RES**ults for **P**ercentage **C**hanges in **Q**uantities of **COM**modities, such as aggregate consumption (QQ). After selecting this parameter for display, the data on the right are the values for these results.

4.   EXPORT RESULTS FROM GDX TO EXCEL

The GAMS code in the UNI-CGE model first unloads selected results into the UNI-Results.GDX file, and then exports those results from the GDX file to the Excel file named UNI-results.XLSX (Figure 4). This process uses GAMS' read-write utility between GAMS and Excel, GDXXRW.

**Figure 4. Exporting results to GDX file, and then to the Excel using GDXRW**
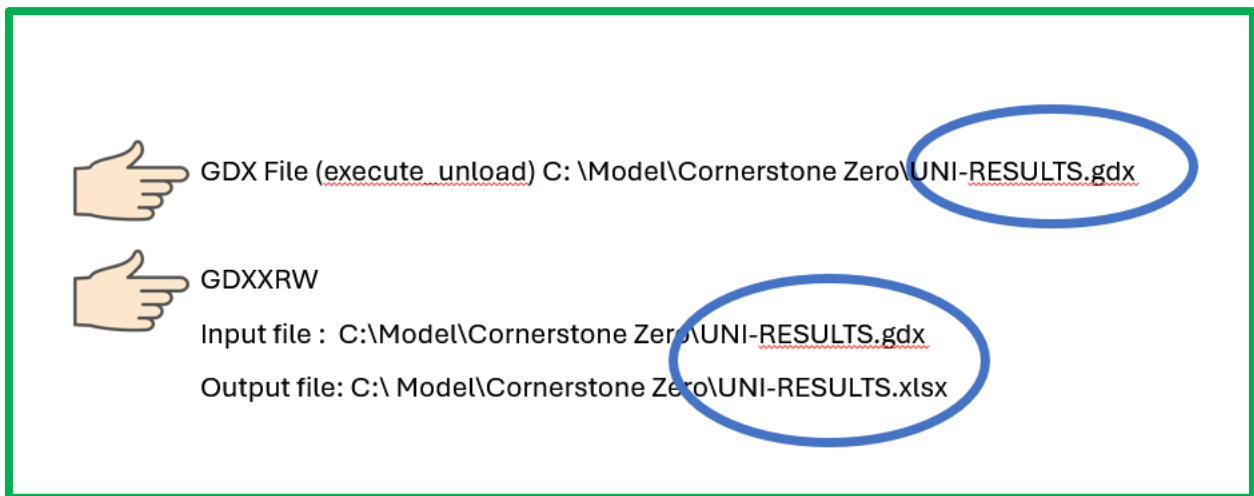
Because the GDXXRW utility may become unsupported by GAMS in the future, this guide also shows you a direct way to export results from GDX to Excel.

First, while in the GDX file, click on the EXPORT button (shown as the red circle labeled **1** in Figure 5).

This will open a dialog box, shown on the right side of Figure 4. Select the name of the Excel file that you want to export results to, shown in the purple circle labeled **2** in Figure 5. The default name is the same as the GDX file. Instead, you may want to create Excel files that have the names of scenarios, such as "tariff_cut.xlsx."

Third, click on the export button, labeled "3".

Figure 5. Exporting results from GDX to an Excel file
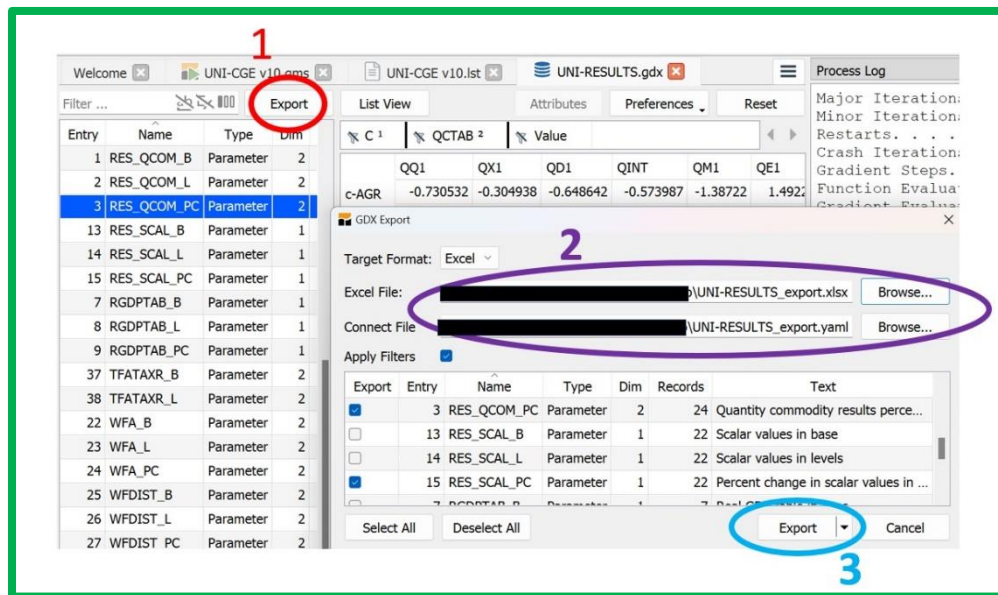
5.   KEY RESULTS IN THE UNI-RESULTS.GDX FILE

The UNI-CGE model code includes commands to organize key results into tables. This makes it easier to view sets of related data instead of single variables or parameters. Table 1 provides a summary of the tables defined in the UNI-CGE model and their contents.

NAME – Search term	Content
Res_QCOM_pc	% change in commodity quantities (production, consumption, trade)
Res_PCOM_pc	% change in commodity prices
Res_PROD_pc	% change in production quantity and value added
Res_SCAL_pc	% change in scalar values (macro variables)
RGTAPtab_pc	% change in real GDP
FACT_pc	% change in factor results
QF_pc	% change in factor quantities by factor and activity
WFA_pc	% change in factor price distortion by factor and activity
CTAXR_B	Base commodity tax rates (sales, export and import taxes)
CTAXR_L	Updated commodity tax rates (sales, export and import taxes)
ATAXR_B	Base activity output tax rates
ATAXR_L	Updated activity output tax rates
YTAXR_B	Base income tax rate
YTAXR_L	Updated income tax rate

6.   HINT ON WORKING WITH GDX FILES

GDX allows you to rearrange the orientation of tables of data so that you can easily format data to be attractive when exported to Excel. "List view" presents the data in columns. "Table view" presents the same data as a matrix, as shown in Figure

3. You can toggle between list and table views by clicking on the button located above the data (Figure 6).

Figure 6. GDX data presented in table view

List View					
C 1	PCTAB 2	Value			
	PQ1	PX1	PD1	PE1	PWE1	PM1
c-AGR	-0.10354	-0.148111	-0.000576573	-0.930929		-0.930929
c-MFG	0.518274	0.103842	0.199738	1.47611	0.470991	1.47611
c-SER	-0.137871	-0.140225	-0.123844	-0.930929		-0.930929