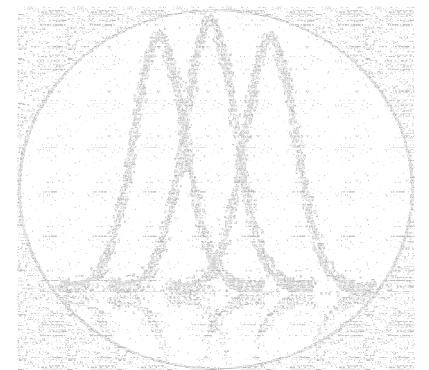


# Merge data in Excel

*Oscar Torres-Reyna*

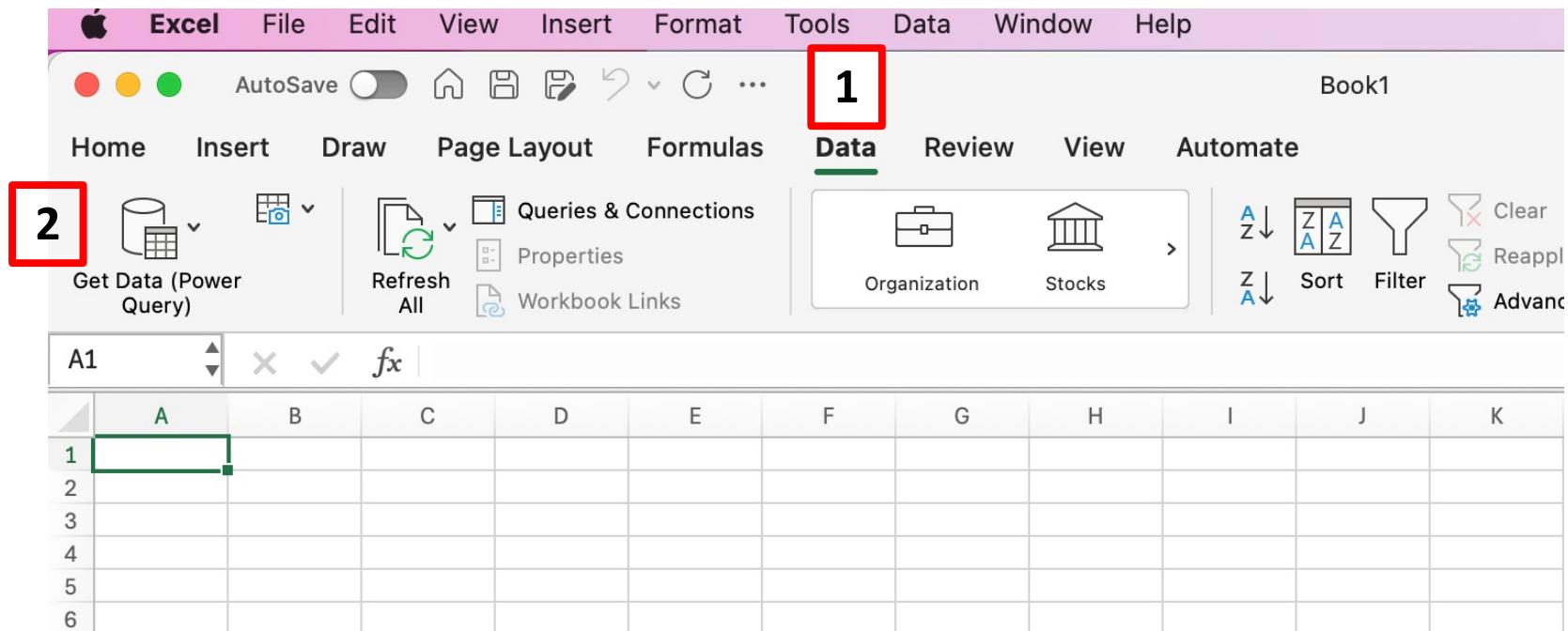


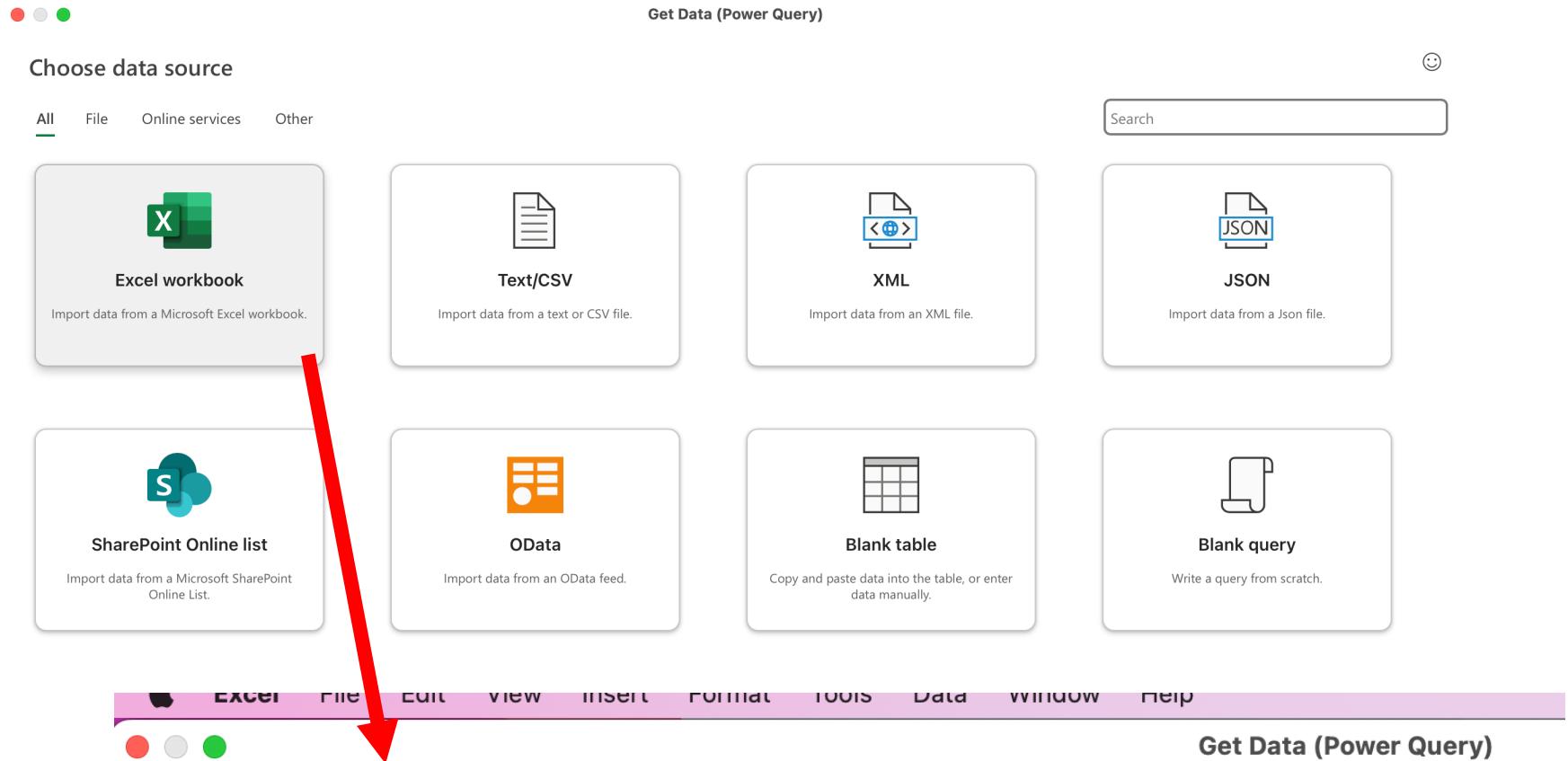
# Content

- Import data using Data Query.
- Merge.

# **Import data using Data Query**

## Import data into Excel using Data Query. Go to Data → Get Data





## Connect to data source

 Excel workbook  
File  
[Learn more](#)

### Connection settings

Select local file:

↑ Browse...

Click on 'Browse' to select the Excel file



## Connect to data source



Excel workbook

File

[Learn more](#)

### Connection settings

Select local file:



Browse...

USALORSGPNOSTSAM.xlsx

If you get an error message, open the file directly in Excel and save it with a different format, like \*.xlsx or \*.csv.

Back

Oscar Torres-Reyna

Cancel

Next



## Get Data (Power Query)



### Choose data

Search

Display options ▾



Excel workbook [2]

Monthly

README

### Monthly

observation_d...	1.2 USALORSGPNOSTS...
2/1/1947	102.3044
3/1/1947	101.9178
4/1/1947	101.5401
5/1/1947	101.185
6/1/1947	100.8719
7/1/1947	100.6229
8/1/1947	100.4594
9/1/1947	100.3933
10/1/1947	100.4126
11/1/1947	100.4958
12/1/1947	100.6207
1/1/1948	100.7671
2/1/1948	100.9168
3/1/1948	101.0518
4/1/1948	101.151

Back

Cancel

Transform data

Load

Power Query Editor

Home Transform Add column View Help

Change the name of the query according to the contents of the data

Close & load New query Options Manage parameters Manage columns Reduce rows Sort

Close Options Parameters

Queries [1] <

United States

observation\_d... 1.2 USALORSG

	Date
1	2/1/1947
2	3/1/1947
3	4/1/1947
4	5/1/1947
5	6/1/1947
6	7/1/1947
7	8/1/1947
8	9/1/1947
9	10/1/1947
10	11/1/1947
11	12/1/1947
12	1/1/1948
13	2/1/1948

Query settings >

Properties

Name United States

Applied steps

- Source
- Navigation 1
- Promoted header
- Changed column

Completed (0.52 s) Columns: 2 Rows: 99+

Step

**Double-click on column titles and change the names as appropriate**

Power Query Editor

Home Transform Add column View Help

Close & load Get data Enter data Options Manage parameters Query Manage columns Reduce rows Sort Transform Combine

Close New query Options Parameters

Queries [1] < United States

Table.RenameColumns(#"Changed column")

	date	1.2 United States
1	2/1/1947	102.3044
2	3/1/1947	101.9178
3	4/1/1947	101.5401
4	5/1/1947	101.185
5	6/1/1947	100.8719
6	7/1/1947	100.6229
7	8/1/1947	100.4594
8	9/1/1947	100.3933
9	10/1/1947	100.4126
10	11/1/1947	100.4958
11	12/1/1947	100.6207
12	1/1/1948	100.7671
13	2/1/1948	100.9168
14	2/1/1948	101.0510

Query settings >

Properties

Name: United States

Applied steps

- Source
- Navigation 1
- Promoted header
- Changed column
- Renamed column

Step

Columns: 2 Rows: 99+

If needed, change the type of variable by clicking on the icon to the left of the name

The screenshot shows the Microsoft Power Query Editor interface. At the top, there's a navigation bar with tabs: Home (selected), Transform, Add column, View, and Help. Below the navigation bar are several icons: Close & load, Get data, Enter data, Options, Manage parameters, Query, Manage columns, Reduce rows, Sort, Transform, and Combine. The main area is titled "Queries [1]" and contains a single query named "United States". The table within the query has two columns: "date" and "1.2 United States". The "date" column contains dates from 2/1/1947 to 2/1/1948. The "1.2 United States" column contains numerical values ranging from 101.3044 to 101.0510. To the right of the table, there are "Query settings" and "Properties" sections. The "Properties" section shows the name is set to "United States". Below these are the "Applied steps" which include "Source", "Navigation 1", "Promoted header", "Changed column", and "Renamed column". At the bottom of the editor, it says "Columns: 2 Rows: 99+" and includes buttons for Step, Grid, and Table.

**Data Query uses M language, the code can be viewed in the 'Advance Editor'.**

The screenshot shows the Microsoft Power Query Editor interface. A red arrow points from the text above to the 'Advanced editor' button in the top ribbon. The 'Advanced editor' dialog is open, displaying M language code for transforming a query. The code is as follows:

```
1 let
2     Source = Excel.Workbook(File.Contents("C:/Users/oscarr/Downloads/USALORSGPNOTSAM.xlsx"),
3         null, true),
4     #"Navigation 1" = Source{[Item = "Monthly", Kind = "Sheet"]}[Data],
5     #"Promoted headers" = Table.PromoteHeaders(#"Navigation 1", [PromoteAllScalars = true]),
6     #"Changed column type" = Table.TransformColumnTypes(#"Promoted headers", {"observation_date", type date}),
7     #"Renamed columns" = Table.RenameColumns(#"Changed column type", {"observation_date", "date"}, {"USALORSGPNOTSAM", "United States"})
8 in
9     #"Renamed columns"
```

The 'Query settings' pane on the right shows the query is named 'United States'. At the bottom right of the dialog are 'Cancel' and 'OK' buttons.

**Import a new dataset following the same steps as with the first import**

The screenshot shows the Microsoft Power Query Editor interface. The ribbon at the top has tabs: Home (selected), Transform, Add column, View, and Help. Below the ribbon, there's a toolbar with icons for Close & load, Get data, Enter data, Options, Manage parameters, Refresh, Properties, Advanced editor, Choose columns, and Remove columns. A red arrow points from the text in the red box down to the 'Get data' button. A dropdown menu is open under 'Get data' with the option 'Excel workbook' selected. A tooltip for 'Excel workbook' says: 'Import data from a Microsoft Excel workbook.' The main area shows a table with two columns: 'date' and '1.2 United States'. The data in the table is:

	date	1.2 United States
2	2/1/1947	102.3044
3	3/1/1947	101.9178
4	4/1/1947	101.5401
5	5/1/1947	101.185
6	6/1/1947	100.8719
7	7/1/1947	100.6229

This is how it all files should look.

Power Query Editor

Home Transform Add column View Help

Close & load Get data Enter data Options Manage parameters Query Manage columns Reduce rows Sort Transform Combine

Queries [11] <

United States  
Canada  
Mexico  
Australia  
Brazil  
China  
Germany  
United Kingdom  
India  
Japan  
G7

Table.RenameColumns(#"Changed")  
1.2 G7

	d...	1.2 G7
1	2/1/1960	100.3259
2	3/1/1960	100.2598
3	4/1/1960	100.1587
4	5/1/1960	100.0465
5	6/1/1960	99.94176
6	7/1/1960	99.84226
7	8/1/1960	99.73795
8	9/1/1960	99.62354
9	10/1/1960	99.5109
10	11/1/1960	99.41862
11	12/1/1960	99.36131
12	1/1/1961	99.33984
13	2/1/1961	99.34852
14	2/1/1961	99.34852

Query settings >  
Properties  
Name: G7  
Applied steps  
Source, Navigation 1, Promoted header..., ABC 123 Changed column, Renamed column

Columns: 2 Rows: 99+ Step

# Merge data

**NOTE 1:** Start the merge with the dataset that has the most values.

**NOTE 2:** First time, select ‘Merge queries as new’. After select ‘Merge queries’ from the first merge.

The screenshot shows the Power Query Editor interface. At the top, there's a red box labeled 'Merge data'. A red arrow points from this box down to the 'Merge queries' button in the ribbon. Three red boxes numbered 1, 2, and 3 are overlaid on the ribbon area. Box 1 is at the top right of the ribbon, box 2 is below it, and box 3 is further down on the right side of the ribbon. The main workspace shows a table named 'Table.Renamed' with 14 rows of data. To the left, a list of queries is shown, with 'G7' selected. A tooltip window is open over the 'Merge queries' button, containing the text: 'Merge queries as new. Merge this query into another query in this project to create a new query.' On the right, the 'Applied steps' pane shows the following sequence of steps: Source, Navigation 1, Promoted header, Changed column names, and Renamed column. At the bottom left, it says 'Columns: 2 Rows: 99+'.

1	2/1/1960	100.3259	
2	3/1/1960	100.2598	
3	4/1/1960	100.1587	
4	5/1/1960	100.0465	
5	6/1/1960	99.94176	
6	7/1/1960	99.84226	
7	8/1/1960	99.73795	
8	9/1/1960	99.62354	
9	10/1/1960	99.5109	
10	11/1/1960	99.41862	
11	12/1/1960	99.36131	
12	1/1/1961	99.33984	
13	2/1/1961	99.34852	
14	3/1/1961	99.33010	

## Merge [?](#)



Select the data.

For each file, select the common variable (shaded area)

Select 'Full Outer' to keep data from both files.

**TIP:** If date is the common variable, the first dataset should have the most dates.

Select tables and matching columns to create a merged table.

Left table for merge \*

United States

1.2 United Sta...	
2/1/1947	102.3044
3/1/1947	101.9178
4/1/1947	101.5401
5/1/1947	101.185
6/1/1947	100.8719

1

Right table for merge \*

Canada

1.2 Cana...	
2/1/1961	98.46886
3/1/1961	98.74841
4/1/1961	99.02375
5/1/1961	99.28657
6/1/1961	99.52695

2

3

Join kind



Left outer



Right outer



Full outer



Inner



Left anti



Right anti



The selection matches 754 of 922 rows from both tables.

4

Cancel

OK

**Check this then save  
(if shown)**

### Privacy levels

The privacy level is used to ensure data is combined without undesirable data transfer. Incorrect privacy levels may lead to sensitive data being leaked outside of a trusted scope. More information on privacy levels can be found [here](#).

Ignore Privacy Levels checks for this file. Ignoring Privacy Levels could expose sensitive or confidential data to an unauthorized person.



h:\



h:\



Save

Cancel

Power Query Editor

Home Transform Add column View Help

Close & load Get data Enter data Options Manage parameters Refresh Properties Advanced editor Manage Choose columns Remove columns Manage rows Reduce rows Sort Transform Combine

Queries [12]

United States Canada Mexico Australia Brazil China Germany United Kingdom India Japan G7 Merge

Table.NestedJoin(#"United States", {"date"}, Canada, "1.2 United Sta...")

	d...	1.2 United Sta...	Canada...
1	2/1/1947	102.3044	[Table]
2	2/1/1961	97.98998	[Table]
3	3/1/1947	101.9178	[Table]
4	3/1/1961	98.03724	[Table]
5	4/1/1947	101.5401	[Table]
6	4/1/1961	98.16286	[Table]
7	5/1/1947	101.185	[Table]
8	5/1/1961	98.34603	[Table]
9	6/1/1947	100.8719	[Table]
10	6/1/1961	98.56826	[Table]
11	7/1/1947	100.6229	[Table]
12	7/1/1961	98.81287	[Table]
13	8/1/1947	100.4594	[Table]
...	...	...	...

Query settings

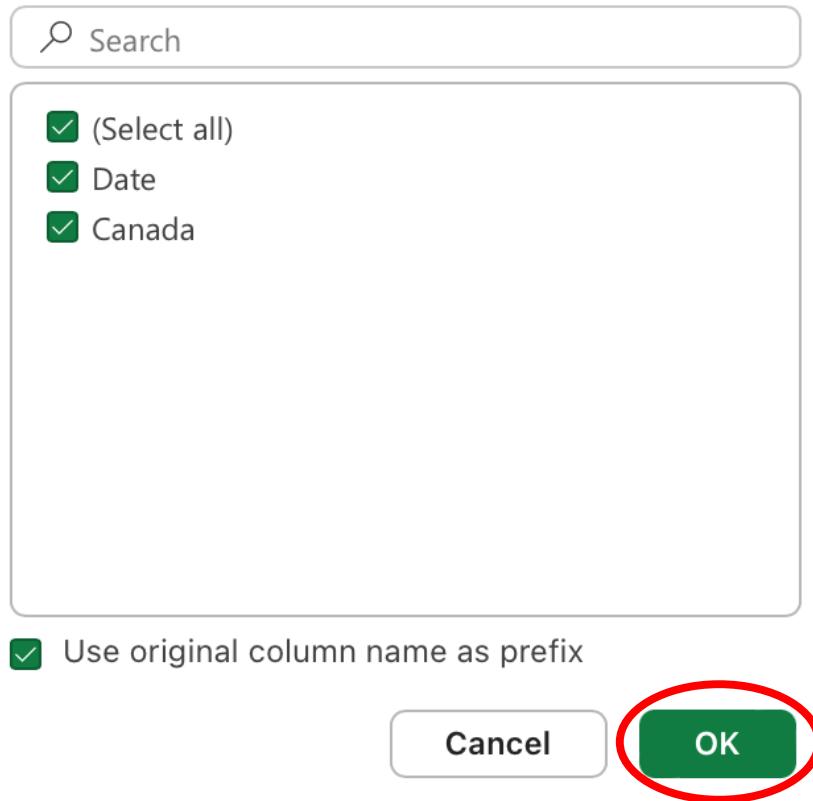
Properties Name: Merge

Applied steps Source

Click here to expand the data

Completed (0.78 s) Columns: 3 Rows: 99+

Step



**When expanding, it might be a good idea to keep the original column name as prefix. You may need to remove later.**

Power Query Editor

The screenshot shows the Microsoft Power Query Editor window. The ribbon at the top has tabs for Home, Transform, Add column, View, and Help. The Home tab is selected. The toolbar below the ribbon contains icons for Close & load, Get data, Enter data, Options, Manage parameters, Refresh, Properties, Advanced editor, Manage columns, Choose columns, Remove columns, Reduce rows, Sort, Transform, and Combine.

The main area is divided into three sections: Queries [12] on the left, a preview grid in the center, and Query settings on the right.

- Queries [12]:** A list of 12 queries, with "Merge" currently selected and highlighted in grey.
- Preview Grid:** Displays a table with four columns: date, 1.2 United States, date.1, and 1.2 Canada.1. The data shows historical values for the United States and Canada from 1961 to 1962.
- Query settings:** On the right, under "Applied steps", the "Expanded Cana..." step is listed, indicating it was used to expand the "Canada" table.

At the bottom, status information says "Completed (0.48 s) Columns: 4 Rows: 99+", and there are buttons for Step, Grid, and Table.

	date	1.2 United States	date.1	1.2 Canada.1
1	2/1/1961	97.98998	2/1/1961	98.46886
2	3/1/1961	98.03724	3/1/1961	98.74841
3	4/1/1961	98.16286	4/1/1961	99.02375
4	5/1/1961	98.34603	5/1/1961	99.28657
5	6/1/1961	98.56826	6/1/1961	99.52695
6	7/1/1961	98.81287	7/1/1961	99.7356
7	8/1/1961	99.0663	8/1/1961	99.90649
8	9/1/1961	99.31747	9/1/1961	100.0414
9	10/1/1961	99.55596	10/1/1961	100.1569
10	11/1/1961	99.7716	11/1/1961	100.2702
11	12/1/1961	99.95442	12/1/1961	100.3864
12	1/1/1962	100.0959	1/1/1962	100.4857
13	2/1/1962	100.1891	2/1/1962	100.5401
14	3/1/1962	100.2217	3/1/1962	100.5214

**After the first merge, select ‘Combine’ → ‘Merge queries’ since you will add more data**

The screenshot shows the Microsoft Power Query Editor interface. The top menu bar includes Home, Transform, Add column, View, and Help. The Home tab is selected. The ribbon below the menu has several icons: Close & load, Get data, Enter data, Options, Manage parameters, Refresh, Properties, Advanced editor, Manage, Choose columns, Remove columns, Reduce rows, Sort, Transform, and Combine. The main area is titled "Queries [12]" and displays a list of 12 queries: United States, Canada, Mexico, Australia, Brazil, China, Germany, United Kingdom, India, Japan, G7, and Merge. The "Merge" query is currently selected. To the right of the query list is a preview pane showing a table with columns: 1.2 United Sta..., 1.2 Canada.Can..., 1.2 Mexico.d..., and 1.2 Mex. The table contains 11 rows of data. Above the preview is the formula: `Table.ExpandTableColumn(#"Merged queries 8", "G7", {"date", "G7"}, {"G7.date", "G7.G7"})`. On the far right, there is a "Query settings" panel with sections for Properties (Name: Merge) and Applied steps, which lists various expansion and merging steps. At the bottom of the editor, status information shows "Completed (2.31 s)" and "Columns: 22 Rows: 99+", along with Step, Step Back, and Step Forward buttons.

## Merge ?



Select a table and matching columns to create a merged table.

Merge



D...	1.2 U...	Canada.D...	1.2 Canada.Can...	
2/1/1961	97.98998	2/1/1961	98.46886	
3/1/1961	98.03724	3/1/1961	98.74841	
4/1/1961	98.16286	4/1/1961	99.02375	
5/1/1961	98.34603	5/1/1961	99.28657	
6/1/1961	98.56826	6/1/1961	99.52695	

Right table for merge \*

Mexico



D...	1.2 Mexi...
2/1/1960	101.5565
3/1/1960	101.4561
4/1/1960	101.3557
5/1/1960	101.2554
6/1/1960	101.1549

Full outer (all rows from both)

Join kind



✓ The selection matches 766 of 922 rows from both tables.

Os

Cancel

OK

22

**Power Query Editor**

Home Transform Add column View Help

Close & load Get data Enter data Options Manage parameters Refresh Properties Advanced editor Manage Choose columns Remove columns Reduce rows Sort Transform Combine

Close & load. Save your changes to this query, close the Query Editor window, and load results to the default destination.

United States  
Canada  
Mexico  
Australia  
Brazil  
China  
Germany  
United Kingdom  
India  
Japan  
G7  
Merge

Query settings

Name: Merge

Applied steps

- Expanded Ge...
- Merged queri...
- Expanded Un...
- Merged queri...
- Expanded Ind...
- Merged queri...
- Expanded Jap...
- Merged queri...
- Expanded G7

After merging all the files, close and upload the data to an Excel workbook.

	8/1/1960	99.60513	null	null	8/1/1960
7	8/1/1960	99.60513	null	null	8/1/1960
8	9/1/1960	99.20438	null	null	9/1/1960
9	10/1/1960	98.80543	null	null	10/1/1960
10	11/1/1960	98.45563	null	null	11/1/1960
11					

Completed (231 rows) Columns: 22 Power: 89

Screenshot of the Microsoft Excel ribbon showing the Data tab selected. The ribbon also includes Home, Insert, Draw, Page Layout, Formulas, Review, View, Automate, and Table tabs.

Under the Data tab, there are several icons: Get Data (Power Query), Refresh All, Properties, Organization, Stocks, Sort, Filter, Reapply, Advanced, Text to Columns, What-if Analysis, Group, Ungroup, and Subtotal.

The main area shows a table with data from row 11 to 25. A red arrow points from the text box below to the last row (row 25) of the table.

	date	United States	Canada.date	Canada.Canada	Mexico.date	Mexico.Mexico	Australia.date	Australia.Australia	Brazil.date	Brazil.Brazil	China.date	China.China	Germany.date	
11	11/1/22	99.61045	11/1/22	100.289	11/1/22	100.4023	11/1/22	100.6367	11/1/22	100.5485	11/1/22	99.84419	11/1/22	
12	12/1/22	99.63593	12/1/22	100.2638	12/1/22	100.4809	12/1/22	100.6417	12/1/22	100.6268	12/1/22	99.75269	12/1/22	
13	1/1/23	99.65987	1/1/23	100.2571	1/1/23	100.56	1/1/23	100.6334	1/1/23	100.7376	1/1/23	99.66707	1/1/23	
14	2/1/23	99.68629	2/1/23	100.256	2/1/23	100.6446	2/1/23	100.6072	2/1/23	100.8626	2/1/23	99.56851	2/1/23	
15	3/1/23	99.72163	3/1/23	100.2454	3/1/23	100.7366	3/1/23	100.561	3/1/23	100.9801	3/1/23	99.51784	3/1/23	
16	4/1/23	99.77378	4/1/23	100.2144	4/1/23	100.8323	4/1/23	100.4951	4/1/23	101.0738	4/1/23	99.45559	4/1/23	
17	5/1/23	99.84943	5/1/23	100.157	5/1/23	100.9249	5/1/23	100.4117	5/1/23	101.1327	5/1/23	99.40387	5/1/23	
18	6/1/23	99.95033	6/1/23	100.0746	6/1/23	101.0065	6/1/23	100.3145	6/1/23	101.1537	6/1/23	99.36162	6/1/23	
19	7/1/23	100.0677	7/1/23	99.98019	7/1/23	101.0704	7/1/23	100.2113	7/1/23	101.1459	7/1/23	99.32717	7/1/23	
20	8/1/23	100.1888	8/1/23	99.89067	8/1/23	101.1115	8/1/23	100.1097	8/1/23	101.1227	8/1/23	99.30064	8/1/23	
21	9/1/23	100.3023	9/1/23	99.81965	9/1/23	101.1281						9/1/23	99.28123	
22	10/1/23	100.4033	10/1/23	99.7704	10/1/23	101.125						10/1/23	99.26818	
23	11/1/23	100.4912	11/1/23	99.74024	11/1/23	101.1095						11/1/23	99.26003	
24													12/1/23	99.25388
25														

Notice that the initial file did not have the last available date. We need to copy the new date into the first one to have a complete set of dates.

# Data sources:

*Organization for Economic Co-operation and Development, Composite Leading Indicators: Reference Series (GDP) Normalized for...*

1. <https://fred.stlouisfed.org/series/AUSLORSGPNOSTSAM>
2. <https://fred.stlouisfed.org/series/BRALORSGPNOSTSAM>
3. <https://fred.stlouisfed.org/series/CANLORSGPNOSTSAM>
4. <https://fred.stlouisfed.org/series/CHNLORSGPNOSTSAM>
5. <https://fred.stlouisfed.org/series/DEULORSGPNOSTSAM>
6. <https://fred.stlouisfed.org/series/GBRLORSGPNOSTSAM>
7. <https://fred.stlouisfed.org/series/INDLORSGPNOSTSAM>
8. <https://fred.stlouisfed.org/series/JPNLORSGPNOSTSAM>
9. <https://fred.stlouisfed.org/series/MEXLORSGPNOSTSAM>
10. <https://fred.stlouisfed.org/series/USALORSGPNOSTSAM>
11. <https://fred.stlouisfed.org/series/G7LORSGPNOSTSAM>