



Tax Executives Institute Technology Boot Camp

AN INTRODUCTION TO
MICROSOFT GET & TRANSFORM



Presenters:



Jeff Bogan, CPA – Managing Director

- 20 years of public accounting experience and the leader of Armanino's tax technology practice



Brandon Radlinger, CPA – Senior Associate

- 4 years of experience in public accounting with a strong emphasis in automation, data cleansing, and process standardization



Learning Objectives

Objective of Course:

- Provide an overview of the data life cycle and how it applies to tax processes and tax calculations.
- Describe the challenges faced by tax professionals in transforming data for tax purposes.
- Introduce Microsoft Get & Transform (aka Power Query) and demonstrate functionality.
- Gain “hands-on” experience with Get & Transform through a case study.

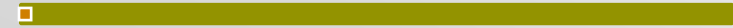
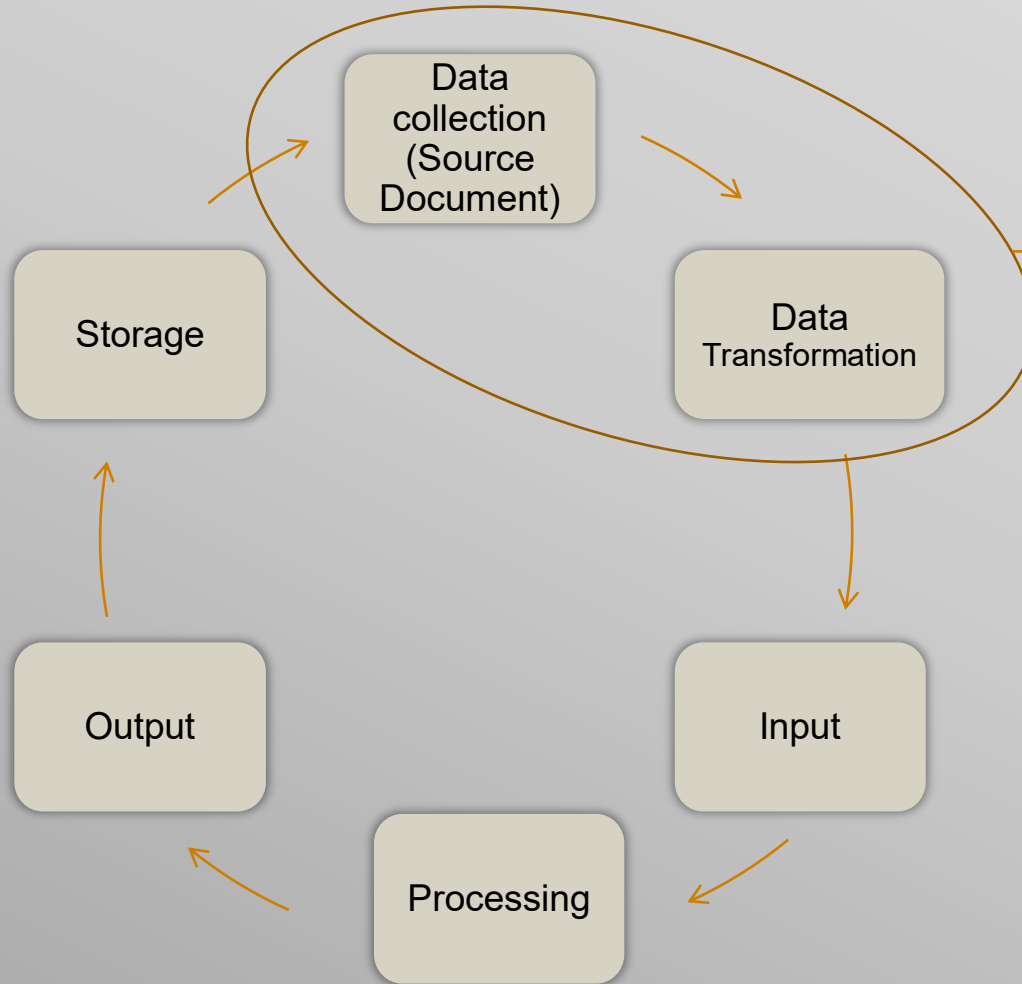


Agenda for Today

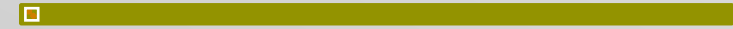
- The Data Life Cycle
- Overview of Get & Transform (Power Query)
- Case Studies
- Create Visualizations in PowerBI

PROCESS/DATA LIFE CYCLE

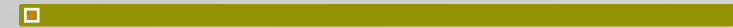
Input, Process, Output



Current State – 60% of time is spent on “Extract, Transform, Load (“ETL”)” activities – typically very low value tasks



Ideal Future State – 20% should be spent on ETL activities and 80% should be spent on analytics, review activities, planning, problem solving, and strategy, which are higher value activities



Applications such as Microsoft Get & Transform (Power Query) and Alteryx help us achieve the Ideal Future State by automating and creating efficiencies with ETL activities



MICROSOFT EXCEL

Get & Transform

- Get & Transform is a data-transformation tool housed within Microsoft Excel and Power BI
- Data often arrives in unstructured formats, which makes the ETL (extract, transform, and load) process a tedious process of manual workarounds
- Get & Transform speeds up the process by cleaning and organizing raw data through automation, which ultimately assists the analytical task of uncovering observations and trends

DOING IT RIGHT

What Is a Proper Data Set?

NOT Proper

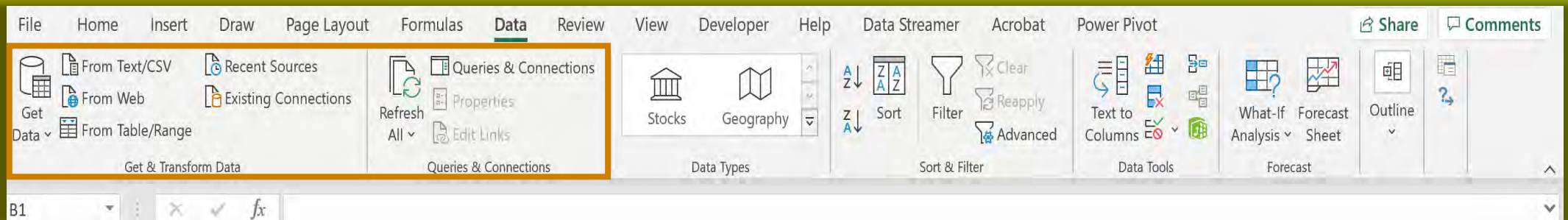
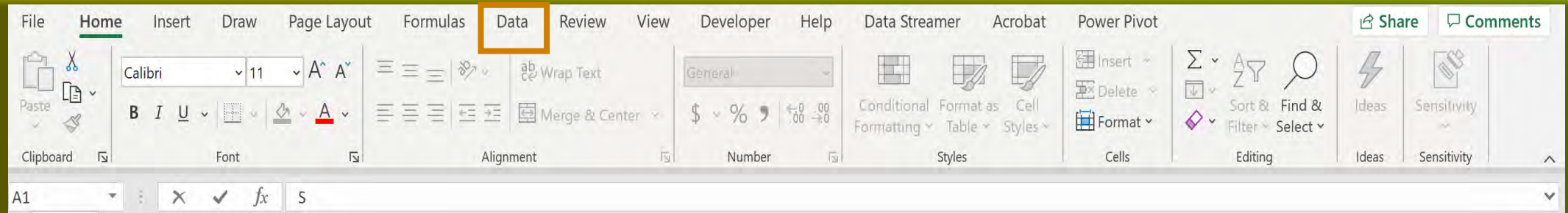
Division	Legal Entity	2020 Income Tax Expense	
101	Ross Corp	100000	
101	Rachel Corp	24000	
101	Joey Corp	12000	
101	Monica Corp	32000	
101	Phoebe Corp	15000	
101	Chandler Corp	21000	
	Subtotal	204000	
102	Cam Corp	3000	
102	Mitch Corp	1200	
102	Phil Corporation	32400	
102	Alex Corp	1200	
102	Manny Corp	1250	
102	Jay Corporation	3210	
	Subtotal	42260	
	Grand Total		246260
wihout Manny	245010		

Proper

Division	Legal Entity	2020 Income Tax Expense
101	Ross Corp	100000
101	Rachel Corp	24000
101	Joey Corp	12000
101	Monica Corp	32000
101	Phoebe Corp	15000
101	Chandler Corp	21000
102	Cam Corp	3000
102	Mitch Corp	1200
102	Phil Corporation	32400
102	Alex Corp	1200
102	Manny Corp	1250
102	Jay Corporation	3210

HOW TO

Locating Get & Transform Functions



Query Editing Tool Bars

Query Name

Formula Bar

Formula Bar: `= Table.RenameColumns("#Removed Columns",{{"Jurisdiction Code.1", "Jurisdiction Code"}, {"Division Code.2",`

	Company ID	Company Name	Jurisdiction	Jurisdiction Code	Division Code	Pre Tax Bo
1	ID 116	Pentash Corporation	Japan	JC 03	3	
2	ID 117	Quatum Corporation	Ireland	JC 05	3	
3	ID 118	Magic Corporation	Canada	JC 02	3	
4	ID 119	Radius Corporaiton	Germany	JC 09	3	
5	ID 120	Signa Corporation	Singapore	JC 10	3	
6	ID 121	Titanium Corporation	Australia	JC 11	3	
7	ID 122	Univert Corporation	Singapore	JC 10	3	
8	ID 123	Vibrant Corporation	Australia	JC 11	3	
9	ID 124	Waker Corportion	Indonesia	JC 12	3	
10	ID 125	Xigba Corporation	US	JC 01	3	
11	ID 126	Zena Corporation	Mexico	JC 13	3	

Data Preview

Applied Steps

Power Query Editor

GET & TRANSFORM

Demo & Case Studies

Get & Transform Functions

- Manage Columns
- Reduce Rows
- Use First Row as Headers
- Replace Values
- Split Column
- Rename
- Clean
- Extract
- Close and Load



TABLE AND SLICER
Examples

MICROSOFT

Power BI

Power BI is a standalone Microsoft business intelligence product, which includes both desktop and web-based applications for loading, modeling, and visualizing data

More information at powerbi.microsoft.com

MICROSOFT

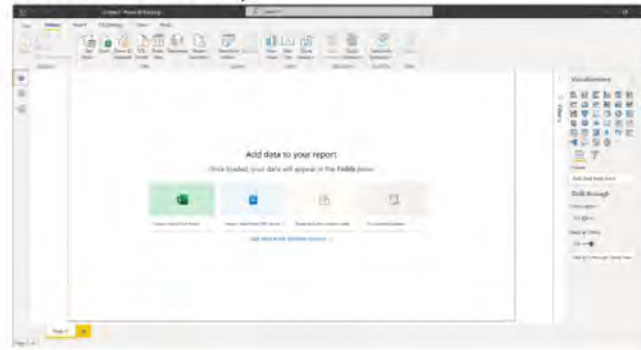
Power BI

- **Connect, transform, clean and analyze data**
 - *Access data from virtually anywhere (database tables, flat files, cloud services, folders, etc.), and create fully automated data shaping and loading (ETL) procedures*
- **Build relational models to blend data from multiple sources**
 - *Create table relationships to analyze information across a series of datasets*
- **Visualize data with interactive reports & dashboards**
 - *Build custom business intelligence tools with best-in-class visualization and dashboard features*
- **Define complex calculations using Data Analysis Expressions (DAX)**
 - *Enhance datasets and enable advanced analytics with powerful and portable DAX expressions*

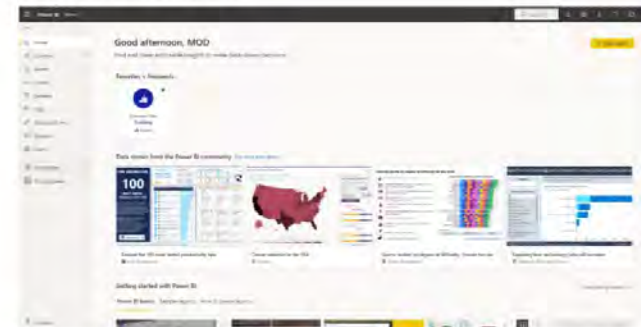
The parts of Power BI

Power BI consists of a Microsoft Windows desktop application called Power BI Desktop, an online SaaS (Software as a Service) service called the Power BI service, and mobile Power BI apps that are available on phones and tablets.

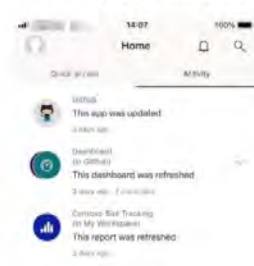
Power BI Desktop

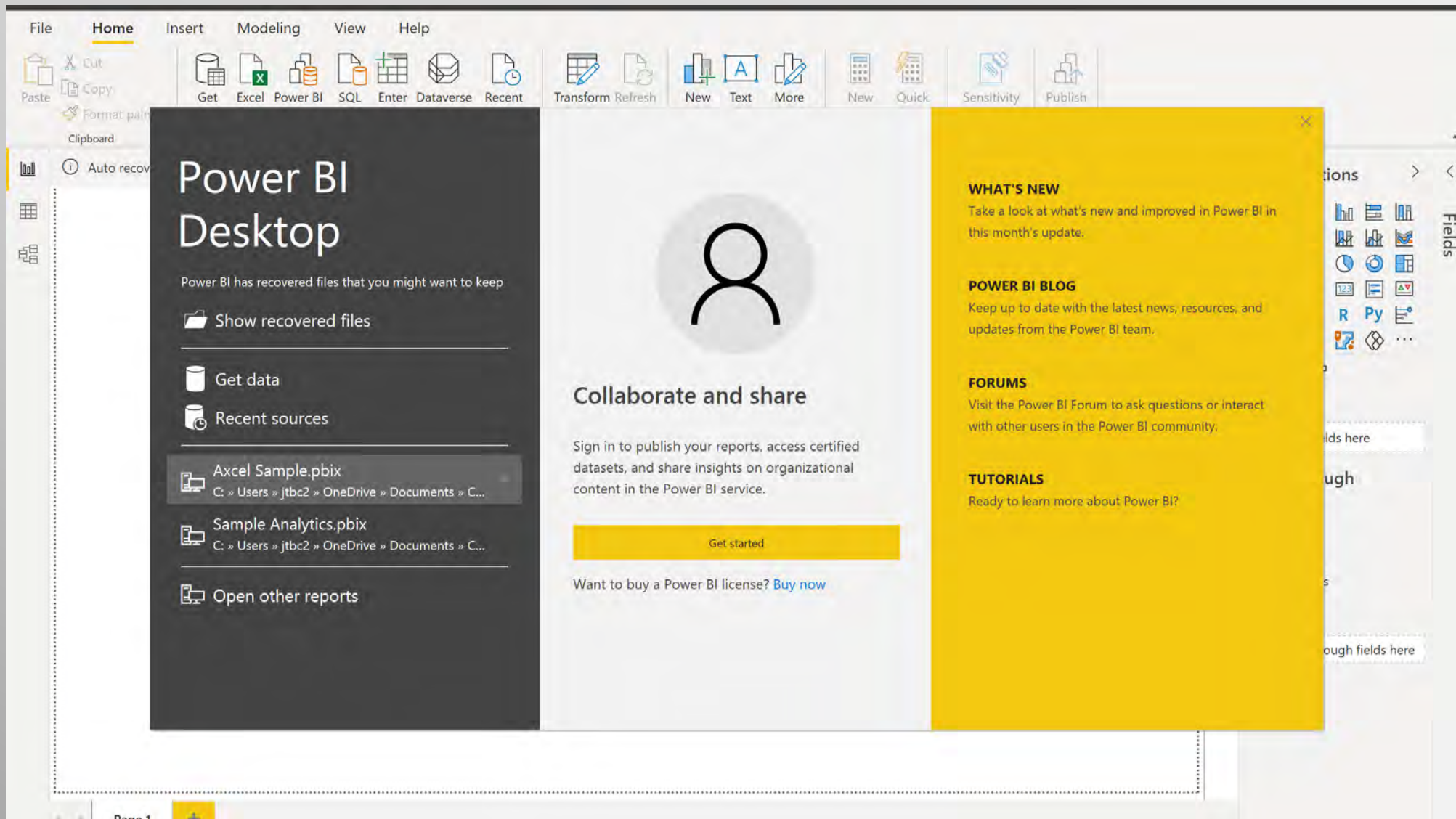


Power BI service



Power BI Mobile





The screenshot displays the Power BI Desktop application interface. At the top, the ribbon includes tabs for File, Home, Insert, Modeling, View, and Help. The Home ribbon is active, showing various icons for data sources (Get, Excel, Power BI, SQL, Enter, Dataverse, Recent), actions (Transform, Refresh), and publishing options (New, Text, More, New, Quick, Sensitivity, Publish). On the left, a sidebar contains navigation icons for Home, Reports, Datasets, and Fields. The main workspace is divided into three vertical panels:

- Left Panel (Dark Grey):** Titled "Power BI Desktop", it features a message: "Power BI has recovered files that you might want to keep". Below this are buttons for "Show recovered files", "Get data", and "Recent sources". Two recent files are listed: "Axcel Sample.pbix" and "Sample Analytics.pbix", both located at "C: » Users » jtbc2 » OneDrive » Documents » C...". At the bottom is an "Open other reports" button.
- Center Panel (Light Grey):** Titled "Collaborate and share", it features a user profile icon and the text: "Sign in to publish your reports, access certified datasets, and share insights on organizational content in the Power BI service." A prominent yellow "Get started" button is centered at the bottom of this panel. Below the button, it says "Want to buy a Power BI license? [Buy now](#)".
- Right Panel (Yellow):** A vertical sidebar containing sections: "WHAT'S NEW" (with a link to "Take a look at what's new and improved in Power BI in this month's update."), "POWER BI BLOG" (with a link to "Keep up to date with the latest news, resources, and updates from the Power BI team."), "FORUMS" (with a link to "Visit the Power BI Forum to ask questions or interact with other users in the Power BI community."), and "TUTORIALS" (with a link to "Ready to learn more about Power BI?").

POWER BI Workflow

Connect, shape and transform raw data

Build table relationships to tie sources together

Design interactive reports to explore and visualize data

Untitled - Power BI Desktop

Search

Sign in

File Home Help Table tools

Paste Copy Get data Excel Power BI datasets SQL Enter data Dataverse Recent sources Transform Refresh data Manage relationships New Quick New New measure measure column column table Manage roles View as Publish

Clipboard Data Queries Relationships Calculations Security Share

Legal Entity Name	Division	Jurisdiction	2019 Taxable Income	2019 Tax Rate	2019 Tax Expense	2018 Tax Expense	Variance \$	Variance %
Alpha Corporation	Asia	Japan	11000	0.3	3300	3000	300	0.1
Beta Corporation	Asia	Japan	15500	0.3	4650	4500	150	0.0333333333333333
Ross Corp	LA	Argentina	1700	0.3	510	390	120	0.307692307692308
Zeta Corp	Asia	China	25000	0.25	6250	5500	750	0.136363636363636
Gamma Corp	Asia	China	12500	0.25	3125	3000	125	0.0416666666666667
Pivot Corp	LA	Brazil	4800	0.34	1632	1530	102	0.0666666666666668
Delta Corp	Asia	Indonesia	9000	0.25	2250	2000	250	0.125
Zebra Corp	NA	USA	12650	0.21	2656.5	2520	136.5	0.0541666666666667
Sigma Corp	NA	USA	18000	0.21	3780	2730	1050	0.384615384615385
Egna Corp	NA	USA	16000	0.21	3360	3150	210	0.0666666666666667
Chanlder Corp	NA	USA	12800	0.21	2688	2625	63	0.024
Monico Corp	EU	France	7000	0.31	2170	1980	190	0.095959595959596
Phoebe Corporation	EU	France	16000	0.31	4960	4290	670	0.156177156177156
Tri Corp	EU	Germany	29000	0.3	8700	8400	300	0.0357142857142857
Epsilon Corporation	Asia	Taiwan	11000	0.2	2200	2000	200	0.1
Falangie Corp	LA	Mexico	2600	0.3	780	720	60	0.0833333333333333
Break Corp	NA	Mexico	1700	0.3	510	450	60	0.133333333333333
Stella Corp	EU	Germany	38000	0.3	11400	10500	900	0.0857142857142857
Bing Corp	NA	USA	41000	0.21	8610	7980	630	0.0789473684210526
Geller Corp	EU	Spain	19000	0.25	4750	3500	1250	0.357142857142857
Pritchett Corporation	EU	France	21000	0.31	6510	7590	-1080	-0.142292490118577
Alex Corp	NA	USA	11000	0.21	2310	2730	-420	-0.153846153846154
Dunfee Corp	NA	USA	44000	0.21	9240	9450	-210	-0.0222222222222222
Phil Corp	EU	France	11000	0.31	3410	3960	-550	-0.138888888888889
Haley Corp	NA	USA	33000	0.21	6930	6720	210	0.03125
Special Corp	EU	Germany	16000	0.3	4800	3600	1200	0.333333333333333

Fields

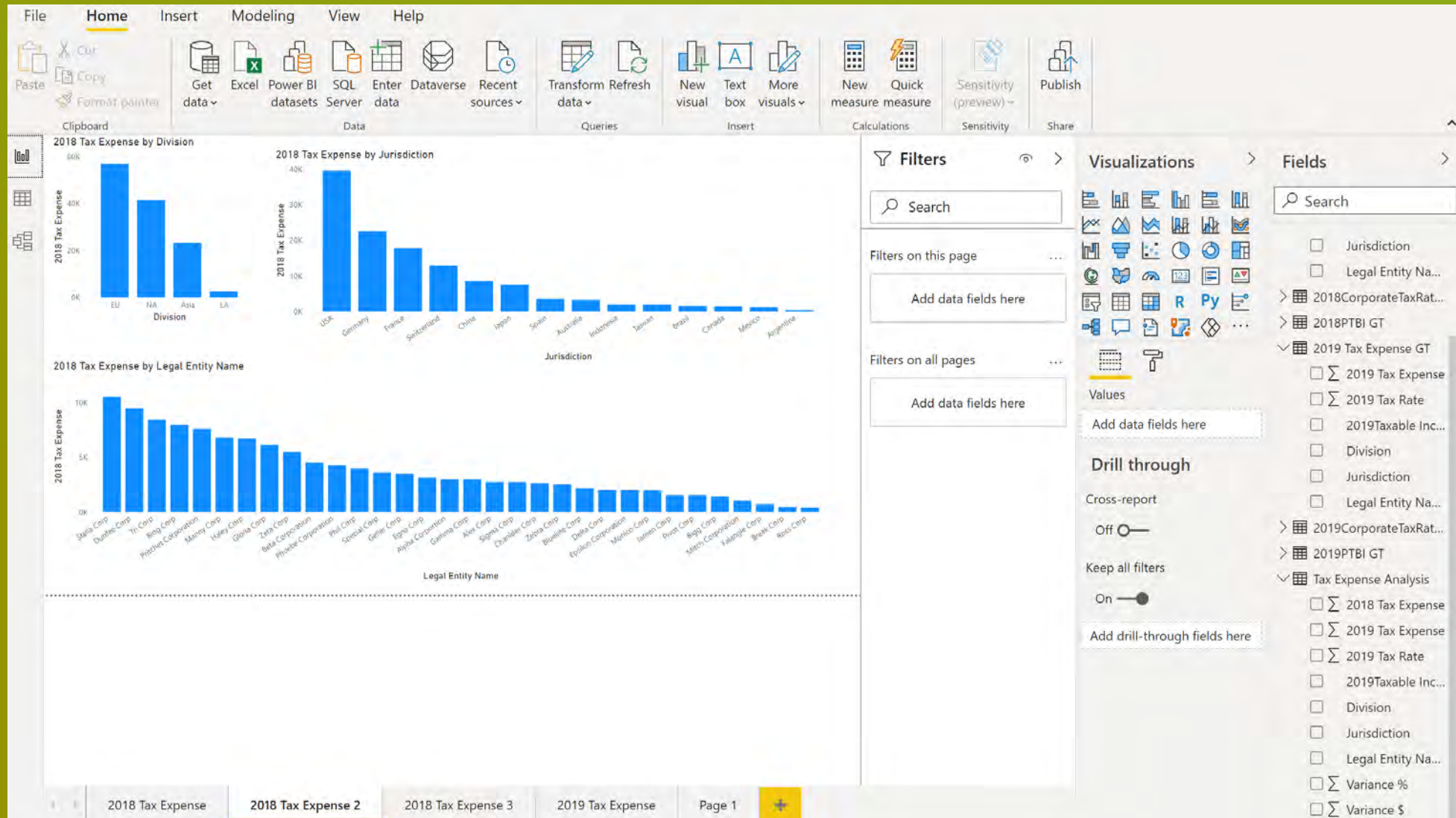
Search

- 2018 Tax Expense GT
- 2018CorporateTaxRate ...
- 2018PTBI GT
- 2019 Tax Expense GT
- 2019CorporateTaxRate ...
- 2019PTBI GT
- Tax Expense Analysis

The screenshot displays the Microsoft Power BI Desktop interface. At the top, there is a navigation bar with icons for About, Guided Training, Documentation, Support, Power BI Community, Power BI for developers, Submit an idea, External Tools, Examples, and Consulting services. Below this is a ribbon with various tool icons. The main workspace shows a data model with four tables:

- Axcel 2020 US GT**: 2020 Tax Expense, Comp. No., Company Name, Country, Division.
- Axcel 2020 Foreign GT** (highlighted with a yellow border): 2020 Tax Expense, Comp. No., Company Name, Country, Division.
- Axcel Corp 2020 Com...**: 2020 Tax Expense, Comp. No., Company Name, Country, Division.
- Axcel 2109 Global GT**: 2019 Tax Expense, Comp. No., Company Name, Country, Division.

A relationship line connects the 'Axcel Corp 2020 Com...' table and the 'Axcel 2109 Global GT' table, indicating a 1-to-1 relationship. The 'Fields' pane on the right shows the structure of the selected table, 'Axcel 2020 Foreign GT', with fields: 2020 Tax Expense, Comp. No., Company Name, Country, and Division. Below the main workspace, there is a button labeled 'All tables' with a plus sign.



ENGAGE

Questions?