

SESSION 8-Modeling Ghana's Trade with the USA-2012

PARTNER COUNTRY-PCM METHODOLOGY PRACTICAL APPLICATION

(DR BISHOP AKOLGO-IFFs National Consultant)

OBJECTIVE AND DATA SOURCE

I. Objectives:

- a. Estimate the difference between Ghana's reported export to its partner countries (Ghana_X.xlsx) and Partner countries' reported import from Ghana (Partner_M.xlsx)**
- b. Estimate the difference between Ghana's reported import from its partner countries (Ghana_M.xlsx) and Partner countries' reported export to Ghana (Partner_X.xlsx)**

I. Data source: IMF DOTS, 2012 monthly.

COMPILATION STEPS

- The list of partner countries reported by Ghana does not match the partner countries which reported having trade (export or import) with Ghana.
- Illustration:
 - a. Ghana's export list of partner countries: A, B, C, D
 - b. List of Countries reported as having imported from Ghana: A, B, D, E.
 - c. For Country C, Ghana reported as having exported but Country C did not report any import from Ghana
 - d. For Country E, Ghana has no record of having exported to E, but E reported as having imported from Ghana
 - e. To put together all the data from Ghana's export and Partners' import, we need to create a list of all countries: A, B, C, D, and E: **Ghana_X_IFF.xlsx** (and **Ghana_M_IFF.xlsx**)
- Name the file as **PCM_Ghana_X_Analysis.xlsx** (**PCM_Ghana_M_Analysis.xlsx** for import analysis.) This file has only one column with a list of all the countries, A, B, C, D, E.
 - a. Using Power Pivot in Excel, build a model relating **Ghana_X_IFF.xlsx** to **Ghana_X.xlsx** and **Partner_M.xlsx** and create calculated fields:
 - i. $\text{Export_Over_Invoiced_amount} = \text{MAX}(0, (\text{Ghana_X} - \text{Partner_M}/1.1))$
 - ii. $\text{Export_Under_Invoiced_amount} = \text{MAX}(0, (\text{Partner_M}/1.1 - \text{Ghana_X}))$
 - iii. Dividing import data by a factor of 1.1 is because import data is reported as CIF while export data as FOB.

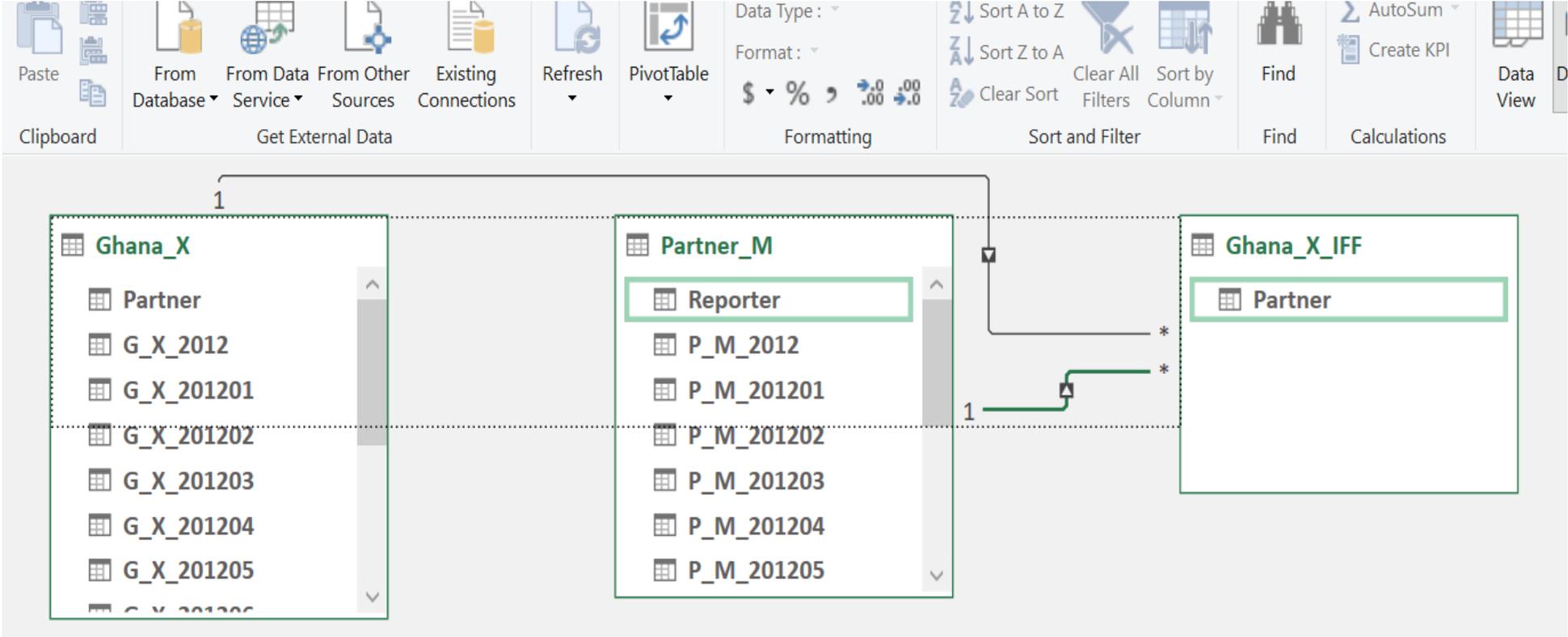
YOU WILL SEE THREE TABLES

The image shows the Microsoft Excel ribbon and task pane. The ribbon includes the following groups: Clipboard, Get External Data (From Database, From Data Service, From Other Sources, Existing Connections), Refresh, PivotTable, Formatting (Data Type, Format), Sort and Filter (Sort A to Z, Sort Z to A, Clear Sort, Clear All Filters, Sort by Column), Find, and Calculations (AutoSum, Create KPI). The task pane displays three tables:

- Ghana_X**
 - Partner
 - G_X_2012
 - G_X_201201
 - G_X_201202
 - G_X_201203
 - G_X_201204
 - G_X_201205
 - G_X_201206
- Partner_M**
 - Reporter
 - P_M_2012
 - P_M_201201
 - P_M_201202
 - P_M_201203
 - P_M_201204
 - P_M_201205
- Ghana_X_IFF**
 - Partner

BUILDING THE RELATIONSHIPS

- a. At this point, three tables are not related to each other. To model the relation between Ghana_X_IFF and Ghana_X, drag the field, "Partner" from Ghana_X_IFF to "Partner" in Ghana_X. Repeat this process for Ghana_X_IFF and Partner_M.
- b. There should be lines linking tables. At the ends of the lines, a "*" should be on the side of Ghana_X_IFF table and a "1" on Ghana_X and Partner_M. This indicates one-to-many relations.



YOUR FINAL OUTPUT SHOULD LOOK LIKE BELOW

	Pa...	Ghana_X	Partner_M	Ghana_X_Over	Ghana_X_Under	Add Column
1	Afghanist...	0.00065		0.00065	0	
2	Algeria		2.608016	0	2.37092363636364	
3	America...	0.044412	0.047076	0.001615636363...	0	
4	Angola	4.169004	9.985931	0	4.90911509090909	
5	Antigua a...	88.645854	0.016493	88.6308603636364	0	
6	Argentina	0.003848	0.019008	0	0.013432	
7	Armenia,...		0.416248	0	0.378407272727273	
8	Asia not ...	0.00082		0.00082	0	
9	Australia	5.635534	7.723394	0	1.38573327272727	
10	Austria	0.550775	0.259286	0.315060454545...	0	
11	Azerbaija...		0.0654	0	0.0594545454545...	

Ghana_X | Partner_M | **Ghana X IFF**

TO SUMMARISE

- The steps to follow, as outlined, include:
 1. Creating a unified list of partner countries.
 2. Using Power Pivot in Excel to relate the data and create calculated fields for over and under invoiced amounts.
 3. Formatting the results and identifying high-risk countries based on the calculated misinvoicing amounts.
 4. Combining the lists of countries from Ghana's export and import data with partner countries' export and import data to ensure all countries are considered in the analysis.
 5. Calculating the over-invoiced and under-invoiced amounts for exports and imports using the formulas provided.
 6. Identifying the top high-risk countries with misinvoicing in exports and imports.
-