Process Definition Document for Intercompany Reconciliation of a Fortune 50 Company

COMPANY NAME REDACTED

Contents

Section 1 – Basic information

Process Name Process = process or activity or task in scope of automation, do not insert region/geo in the name	**KQM IC Tieouts**
Description and Scope max 3 sentences	Each month Integration Coordinators complete Inter-Company Tieouts to ensure that the intercompany accounts tie out and have no variances. The intercompany activity should tie out at a country level and net to zero worldwide.
Entities involved Approximate total number of cty-lc combinations	65 *The number of entities involved will change due to new acquisition integrations and completed acquisition integrations.

Section 2 – Queries

The following query produces the data in Variable Input 3.

WD4_ALL v2.str
actual.str

*Note some of the columns in the SELECT statements may need to be updated for the SPSS query to work properly.

Section 3 – Variable Inputs

Please note that Variable Inputs are referred to throughout this PDD by their Variable Input Number (see table below).

Variable Input File Name:	**Current Month Data**	**Filter Values Template**	**Major 019 Template**	**Major 298 Template**	**Majors 031 and 033 Template**	**Major 036 Template**	**LCTRY for MINOR Template**
Variable Input Number:	VI-1	VI-NS1-A	VI-NS1-1	VI-NS1-2	VI-NS1-3	VI-NS1-4	VI-NS1-B

The Variable Inputs in this PDD are used to create reconciliations for a company that Company acquired, NS1.

The following Variable Input can be used for any company that Company acquires:

Variable Input File Name:	**Current Month Data**
Variable Input Number:	VI-1

The following Variable Inputs are unique to a company that Company acquired, NS1:

Variable Input File Name:	**Filter Values Template**	**Major 019 Template**	**Major 298 Template**	**Majors 031 and 033 Template**	**Major 036 Template**	**LCTRY for MINOR Template**
Variable Input Number:	VI-NS1-A	VI-NS1-1	VI-NS1-2	VI-NS1-3	VI-NS1-4	VI-NS1-B

Each company that Company acquires will have five unique Variable Inputs that have the same format (but different data) as the NS1 Variable Inputs above. For example, Randori (RAN) would have the following five Variable Inputs, which are not included in this PDD.

Variable Input File Name:	**Filter Values Template**	**Major 019 Template**	**Major 298 Template**	**Majors 031 and 033 Template**	**Major 036 Template**	**LCTRY for MINOR Template**
Variable Input Number:	VI-RAN-A	VI-RAN-1	VI-RAN-2	VI-RAN-3	VI-RAN-4	VI-RAN-B

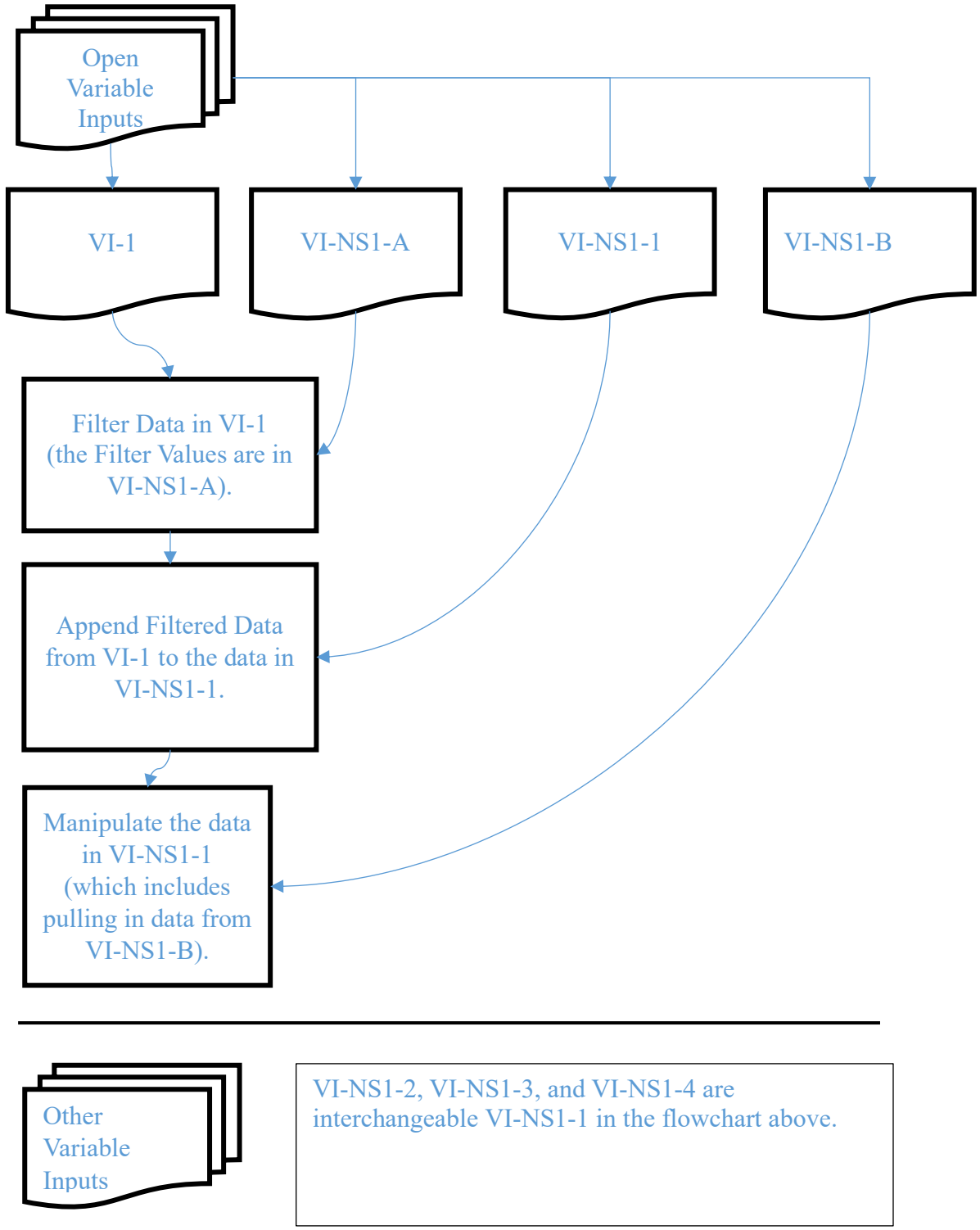
Only the five unique NS1 Variable Inputs are included in this PDD.

The five unique Variable Inputs for other companies that Company has acquired are not included in this PDD under the assumption that [1] those Variable Inputs are not needed now and [2] those Variable Inputs may not be needed in the future, based on the developer's assessment of the process detailed in this PDD.

Variable Input Number	**Variable input File Name** State the exact file name and format that will be provided as an input	**Update frequency** Select appropriate: Prior 1st robot run Prior each robot run Prior 1st robot run and upon update Monthly prior robot run Month XX prior robot run	**Upload file** attach here or refer to PDD section where attached
VI-1	Current Month Data	Prior each robot run	VI-1.xlsx
VI-NS1_A	Filter Values	Prior each robot run	VI-NS1-A.xlsx
VI-NS1_1	Major 019 Template	Prior each robot run	VI-NS1-1.xlsx
VI-NS1_2	Major 298 Template	Prior each robot run	VI-NS1-2.xlsx
VI-NS1_3	Majors 031 and 033 Template	Prior each robot run	VI-NS1-3.xlsx
VI-NS1_4	Major 036 Template	Prior each robot run	VI-NS1-4.xlsx
VI-NS1_B	LCTRY for MINOR Template	Prior each robot run	VI-NS1-B.xlsx

Section 4 – Step-by-Step Overview (Flowchart)

The process in this flowchart is simplified for illustration.



Section 5 – Step-by-Step Overview (Summary)

Part 1 - Gather Data - Filter data in VI-1 by using the Filter Values in VI-NS1-A. Then Append the Filtered Data from VI-1 to the data in VI-NS1-1.

Part 2 – Change the Data Sources in the Worksheet titled Pivot Tables in VI-NS1-V1

Part 3 – Insert data from the Pivot Tables into the Worksheet titled Unsorted Tieout in VI-NS1-V1

Part 4 – Insert concatenation Formulas into the Worksheet titled Unsorted Tieout in VI-NS1-1

Part 5 – Insert XLOOKUP Formulas into the Worksheet titled Unsorted Tieout in VI-NS1-1

Part 6 – Insert addition Formulas into the Worksheet titled Unsorted Tieout in VI-NS1-1

Part 7 – Insert reference Formulas into the Worksheet titled Sorted Tieout in VI-NS1-1

Part 8 – Insert IF Formulas into the Worksheet titled Sorted Tieout in VI-NS1-1

Part 9 – Insert addition Formulas into the Worksheet titled Sorted Tieout in VI-NS1-1

Part 10 – Save VI-NS1-1 as a New File

Part 11 – Repeat the steps in Part 1 – Part 10 but replace Variable Input VI-NS1-1 with VI-NS1-2

Part 12 – Repeat the steps in Part 1 – Part 10 but replace Variable Input VI-NS1-1 with VI-NS1-3

Part 13 – Repeat the steps in Part 1 – Part 10 but replace Variable Input VI-NS1-1 with VI-NS1-4

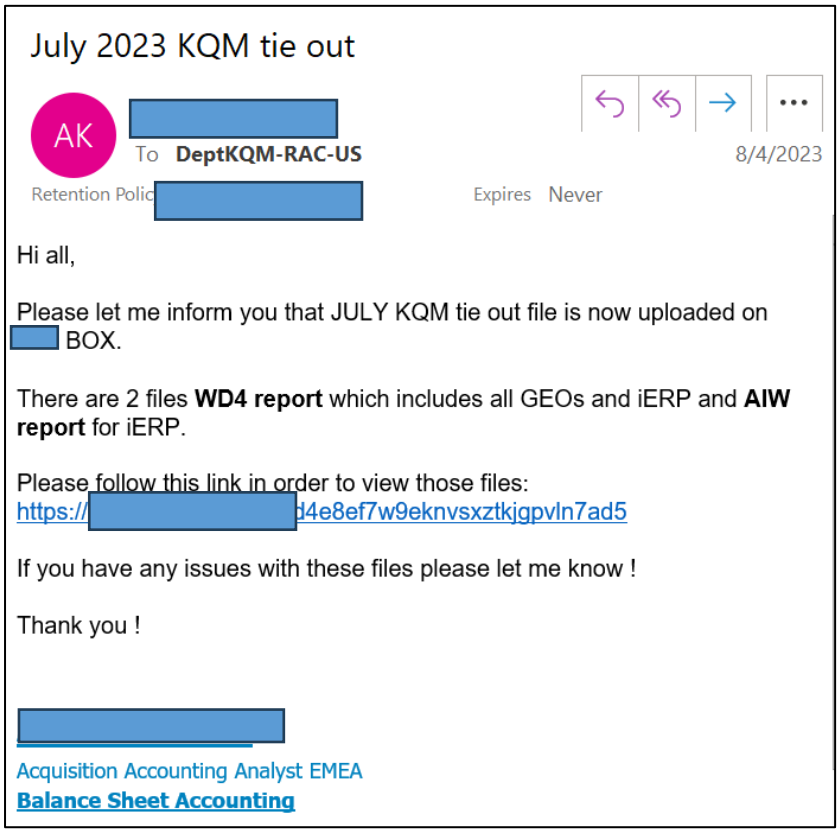
Section 6 – Step-by-Step Detailed Instruction

Part 1 - Gather Data - Filter data in VI-1 by using the Filter Values in VI-NS1-A. Then Append the Filtered Data from VI-1 to the data in VI-NS1-1.

Note – The below example will be using the NS1 acquisition as an example with entities in US, Canada, Ireland, Vietnam, and the UK (countries 897, 649, 754, 855, 866 respectively) Ledger Codes JN, NS, and Divisions JN and S4

The data gathering/filtering process is the same for all three tieouts; the only difference is the Majors that are being pulled in.

Step 1. On 4W, all Coordinators will receive an email from NAME REDACTED informing us that the tie-out file that he ran has been uploaded to Box


July 2023 KQM tie out

AK [redacted] To DeptKQM-RAC-US 8/4/2023

Retention Polic [redacted] Expires Never

Hi all,

Please let me inform you that JULY KQM tie out file is now uploaded on [redacted] BOX.

There are 2 files **WD4 report** which includes all GEOs and iERP and **AIW report** for iERP.

Please follow this link in order to view those files:
https://[redacted]d4e8ef7w9eknvsxztkjgpvln7ad5

If you have any issues with these files please let me know !

Thank you !

[redacted]

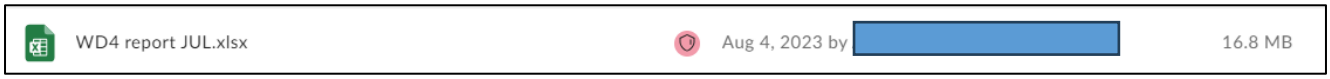
Acquisition Accounting Analyst EMEA
Balance Sheet Accounting

Step 2. Click the link provided in the email from NAME REDACTED to take you to the Box folder.

a. Or you can navigate to the folder directly from Box (once shared)

Step 3. The file in the Box folder that the coordinators will utilize is attached above as VI-1 (aka WD4 report XXX where the XXX represents the Current Month).

a. The WD4 report is used to pull information from FDW (it includes both FDW and SAP data)


WD4 report JUL.xlsx Aug 4, 2023 by [redacted] 16.8 MB

Step 4. Download VI-1 (WD4 report) – this is the large pull (as you can see based on the size of ~17MB) from regular FDW

a. Note this needs to be downloaded due to the size of the file but we've included it in the PDD as VI-1.

Step 5. Open VI-1 and click "Enable Editing"

Step 6. Add filters on the top row

a. All the filters that you will need for each Major are in VI-NS1-A attached above

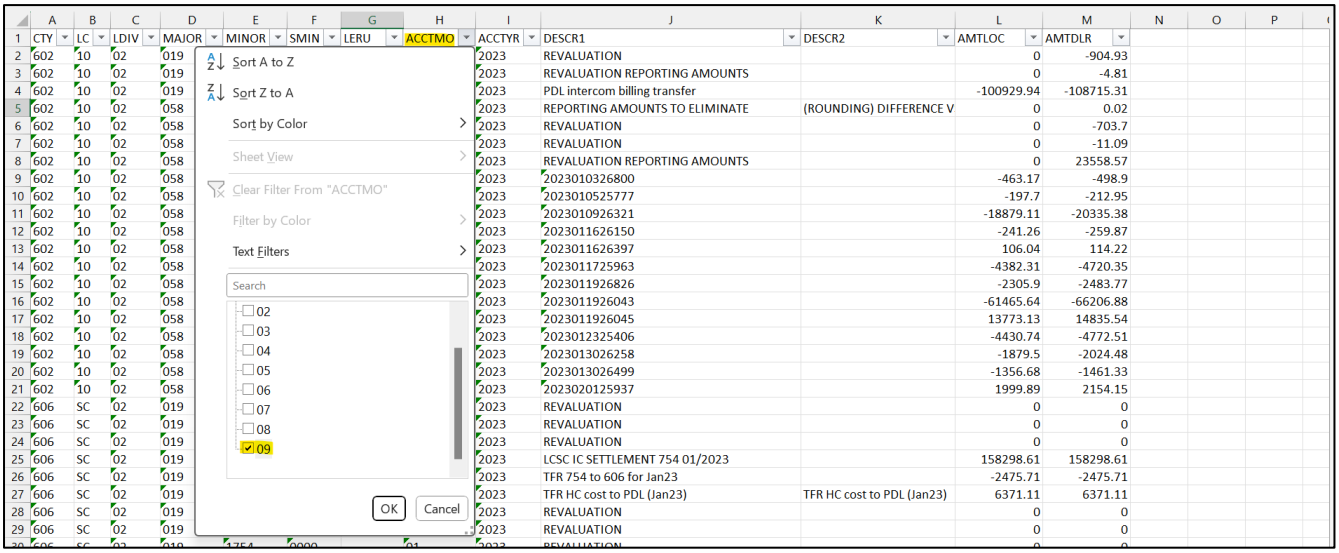
i. These filters are explained more in Step 8

CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	DESCR1	DESCR2	AMTLOC	AMTDLR
602	10	02	019	1702	0000		01	2023	REVALUATION		0	-904.93

Step 7. Filter on the Current Month in column H (in this example, September)

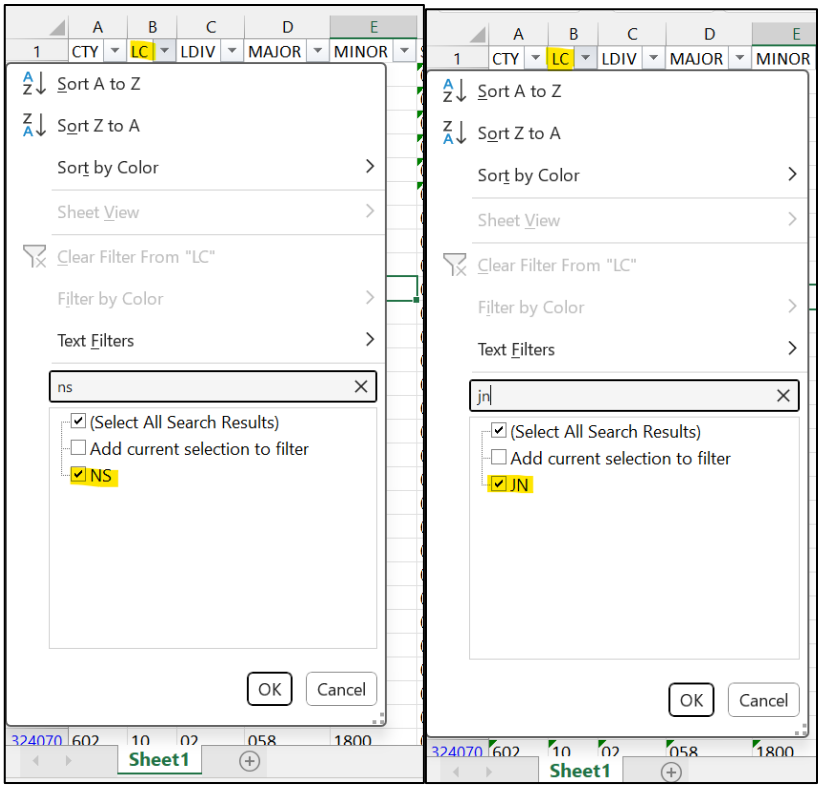
a. This report is done once a month, so all prior months since the acquisition's inception should be in the reconciliation file (VI-NS1-1) which I will reference to later

b. If you do not filter on the current account month, trying to filter on column J "DESCR1" with the name of your acquisition (Step 8 option C below) will NOT work (there is too much data)



Step 8. At this point there are multiple ways to filter on the specific acquisition that you are trying to pull data for which I will describe below (please see VI-NS1-A for complete listing):

a. Filter Column B "LC" on the acquisitions assigned ledger code(s) all at the same time (in this example NS & JN)



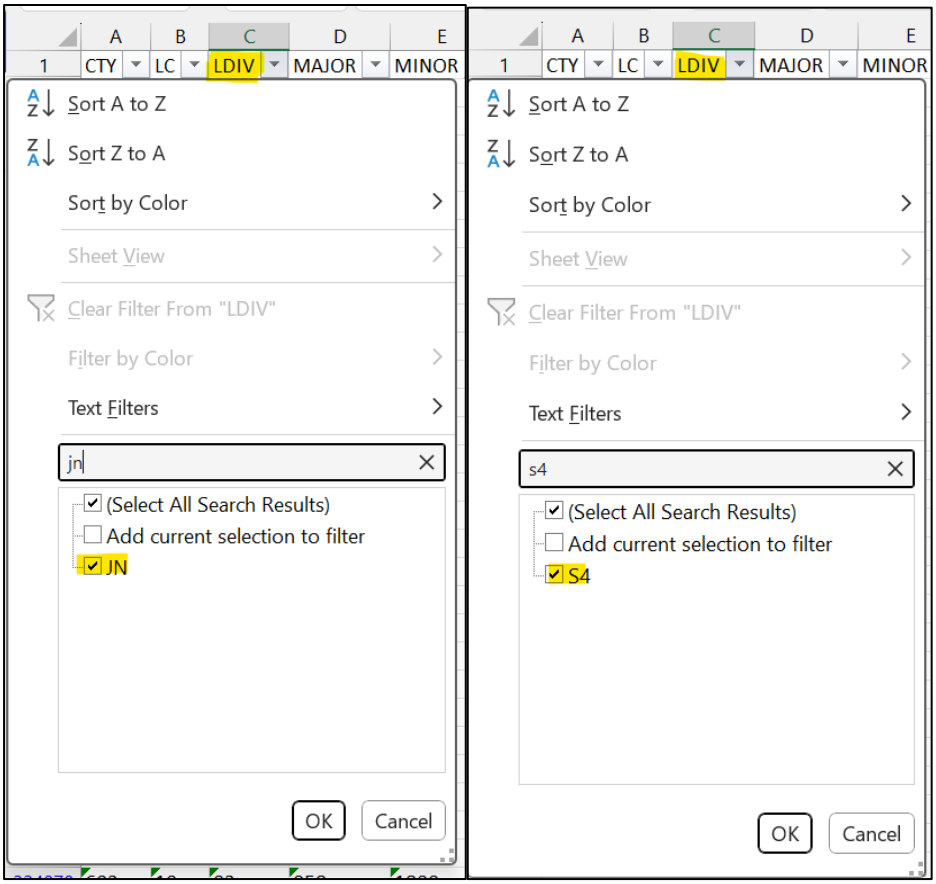
i. Note there can be more than one ledger code assigned to a specific acquisition

ii. There may also be the same LC in a different LDIV or Country that doesn't belong to your specific acquisition (see screenshot below, in this example I'm referencing the NAME REDACTED acquistion [Country 897 & 649 Ledger code SN Division SH] rows highlighted in red do NOT belong to the NS1 acquistion and should NOT be pulled into the IC Tieout)

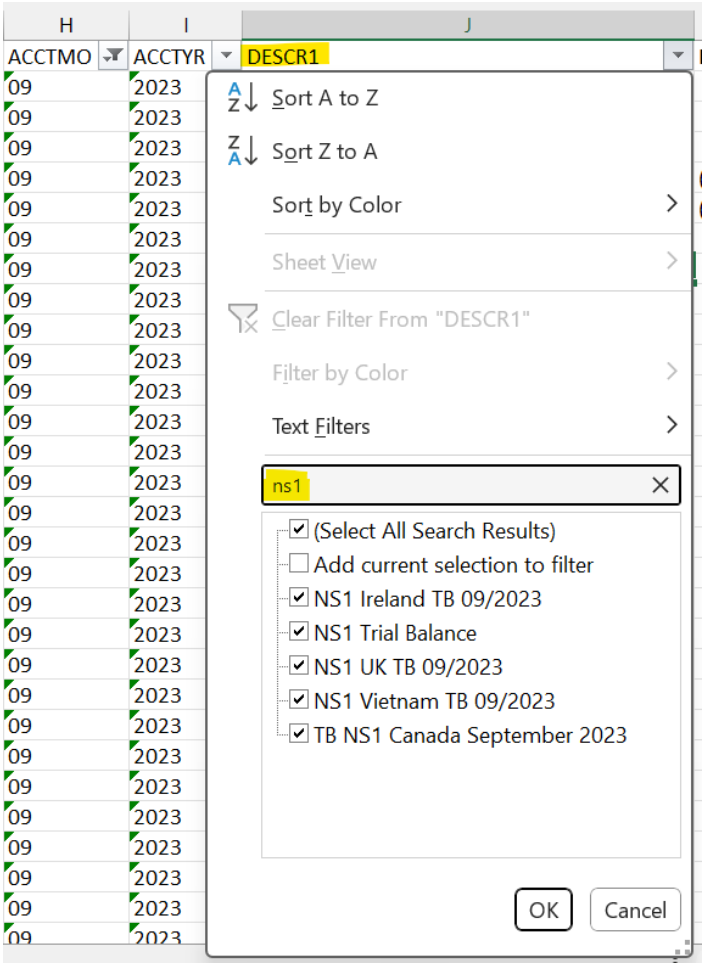
CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	DESCR1	DESCR2	AMT
675	SN	02	058	1800	0000		07	2023	REVALUATION REPORTING AMOUNTS		
675	SN	02	058	1800	0000		07	2023	REVALUATION		
675	SN	02	058	1800	0000		07	2023	CA RECLASS 675SN 07/2023		
675	SN	02	059	3800	0000		07	2023	REVALUATION		
675	SN	02	059	3800	0000		07	2023	REVALUATION		
675	SN	02	059	3800	0000		07	2023	CA LC SN 07/2023		
675	SN	02	059	3800	0000		07	2023	CA RECLASS 675SN 07/2023		
649	SN	SH	019	1912	0000		07	2023	REPORTING AMOUNTS TO ELIMINATE	(ROUNDING) DIFFERENCE VS. SLC	
649	SN	SH	019	1912	0000		07	2023	REVALUATION REPORTING AMOUNTS		
649	SN	SH	019	1912	0000		07	2023	REVALUATION REPORTING AMOUNTS		
649	SN	SH	019	1912	0000		07	2023	REVALUATION		
649	SN	SH	019	1912	0000		07	2023	REVALUATION		
649	SN	SH	019	1912	0000		07	2023	REVALUATION REPORTING AMOUNTS		
649	SN	SH	019	1912	0000		07	2023	R&D Billing btw US & CAD		
649	SN	SH	019	1912	0000		07	2023	[redacted]	Interco R&D	
649	SN	SH	019	1912	0000		07	2023		180 -Intercompany Receivable	
649	SN	SH	019	1912	0000		07	2023		[redacted]	
649	SN	SH	019	1912	0000		07	2023		112 -Accounts Receivable - IC	
649	SN	SH	298	5649	0000		07	2023		310 -Capital Stock	
649	SN	SH	298	5912	0000		07	2023		350 -Retained Earnings	

b. Filter Column C "LDIV" on the ledger division(s) assigned to your acquisition

i. Note there can be more than one LDIV assigned (in this case we have to select Divisions JN & S4)



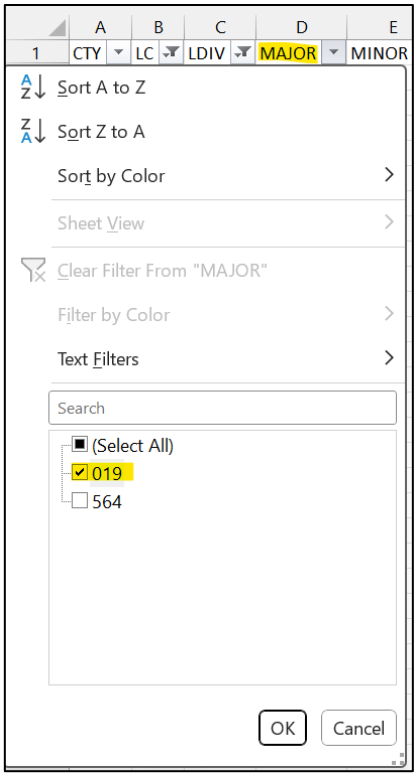
c. Filter Column J “DESCR1” on the acquisitions name



i. If the acquisition has other entities WW, then the automatically generated "REVALUATION" lines (autocalculated FX entries done in the ledger system) will be left out since it doesn't include the acquisition's name, therefore this option needs to be combined with one of the above options to get all the relevant data (see yellow highlighted cells in screenshot below)

CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	DESCR1	DESCR2	AMTLOC	AMTDLR
649	JN	JN	019	2892	0000		09	2023	1 Canada September 2023	2850.04 Due To /	4985.92	3683.33
649	JN	JN	564	0510	0000		09	2023	1 Canada September 2023	4100.01 Intercom	-4985.92	-3683.33
754	NS	S4	019	2892	0000		09	2023	LUATION REPORTING AMOUNTS		0	639.6
866	NS	S4	019	2892	0000		09	2023	LUATION REPORTING AMOUNTS		0	-19409.86
855	NS	S4	019	2892	0000	000	09	2023	LUATION REPORTING AMOUNTS		0	-713
649	JN	JN	019	2892	0000		09	2023	LUATION REPORTING AMOUNTS		0.01	0
649	JN	JN	019	2892	0000		09	2023	LUATION REPORTING AMOUNTS		-17.97	0
754	NS	S4	019	2892	0000		09	2023	LUATION		0	-1093.11
866	NS	S4	019	2892	0000		09	2023	LUATION		0	-2670.72
855	NS	S4	019	2892	0000	000	09	2023	LUATION		0	-8.4
649	JN	JN	019	2892	0000		09	2023	LUATION		-4.22	0
855	NS	S4	019	2892	0000	000	09	2023	ietnam TB 09/2023	2850.02 Due To /	41966269	1733.21
855	NS	S4	564	0510	0000	NSS4	09	2023	ietnam TB 09/2023	4100.01 Intercom	-41966269	-1733.21
866	NS	S4	019	2892	0000		09	2023	K TB 09/2023	2850.00 Due To/F	141272.35	175044.18
897	JN	JN	019	1176	0000		09	2023	rial Balance	2850.03 Due To /	-119704.16	-119704.16
897	JN	JN	019	1649	0000		09	2023	rial Balance	2850.04 Due To /	-3683.32	-3683.32
897	JN	JN	019	1855	0000		09	2023	rial Balance	2850.02 Due To /	-1733.21	-1733.21
897	JN	JN	019	1866	0000		09	2023	rial Balance	2850.00 Due To /	-175044.18	-175044.18
897	JN	JN	564	0510	0000		09	2023	rial Balance	4100.01 Intercom	327104.62	327104.62
754	NS	S4	019	2892	0000		09	2023	reland TB 09/2023	2850.03 Due To/F	112361.23	119954.44

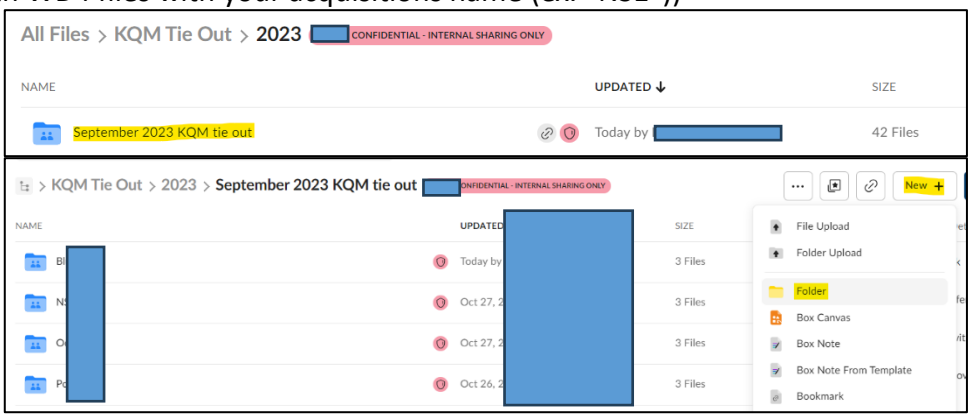
Step 9. Depending on the IC Tieout that you are doing at the moment (Major 019 = VI-NS1_1; Major 298 = VI-NS1_2; Majors 031 and 033 = VI-NS1_3; Major 036 = VI-NS1_4), you will filter on column D "Major" on that specific major (in this example, Major 019).



a. Your end product should look similar to the below

CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	J	DESCR2	AMTLOC	AMTDLR
754	NS	S4	019	2892	0000		09	2023	UATION REPORTING AMOUNTS		0	639.6
754	NS	S4	019	2892	0000		09	2023	UATION		0	-1093.11
754	NS	S4	019	2892	0000		09	2023	eland TB 09/2023	2850.03 Due To/Fr	112361.23	119954.44
866	NS	S4	019	2892	0000		09	2023	UATION REPORTING AMOUNTS		0	-19409.86
866	NS	S4	019	2892	0000		09	2023	UATION		0	-2670.72
866	NS	S4	019	2892	0000		09	2023	K TB 09/2023	2850.00 Due To/Fr	141272.35	175044.18
855	NS	S4	019	2892	0000	000	09	2023	UATION REPORTING AMOUNTS		0	-713
855	NS	S4	019	2892	0000	000	09	2023	UATION		0	-8.4
855	NS	S4	019	2892	0000	000	09	2023	etnam TB 09/2023	2850.02 Due To / F	41966269	1733.21
649	JN	JN	019	2892	0000		09	2023	UATION REPORTING AMOUNTS		0.01	0
649	JN	JN	019	2892	0000		09	2023	UATION REPORTING AMOUNTS		-17.97	0
649	JN	JN	019	2892	0000		09	2023	UATION		-4.22	0
649	JN	JN	019	2892	0000		09	2023	Canada September 2023	2850.04 Due To / F	4985.92	3683.33
897	JN	JN	019	1176	0000		09	2023	ial Balance	2850.03 Due To / F	-119704.16	-119704.16
897	JN	JN	019	1649	0000		09	2023	ial Balance	2850.04 Due To / F	-3683.32	-3683.32
897	JN	JN	019	1855	0000		09	2023	ial Balance	2850.02 Due To / F	-1733.21	-1733.21
897	JN	JN	019	1866	0000		09	2023	ial Balance	2850.00 Due To / F	-175044.18	-175044.18

Step 10. Create a new Box folder in the CM folder where NAME REDACTED posted VI-1 (aka current month WD4 files with your acquisitions name (ex. “NS1”))

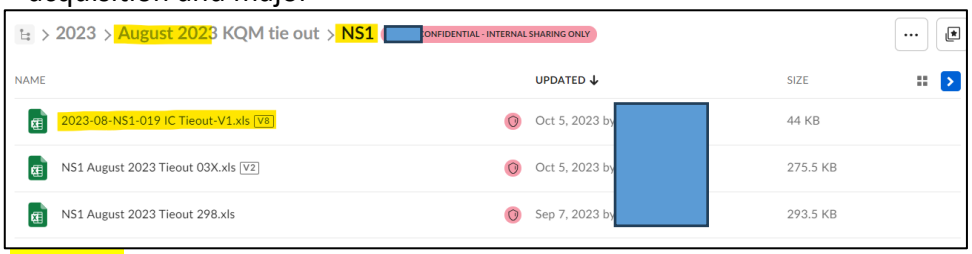


Step 11. Navigate to the Prior Month Box Folder for the IC Tieout for the specific acquisition that you are reconciling

a. KQM Tieout -> Current Year (“2023”) -> Prior Month (“August 2023 KQM tie out”) -> Acquistion (“NS1”) -> Major (“NS1 08-23 Intercompany Tieout – 019") – AKA, VI-NS1-

1

b. Note – the names of the files may differ slightly based on the acquisition and coordinator assigned to it but should have all the same data such as month, year, acquisition and major

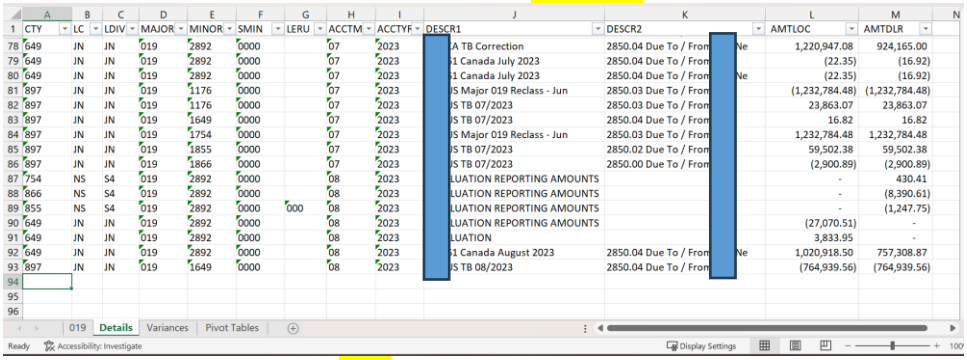


Step 12. Open VI-NS1-1 and resave as the Current Month file by changing the date in the file name

a. This is how all the prior month's data since the acquisition's inception is included in the Current Month file

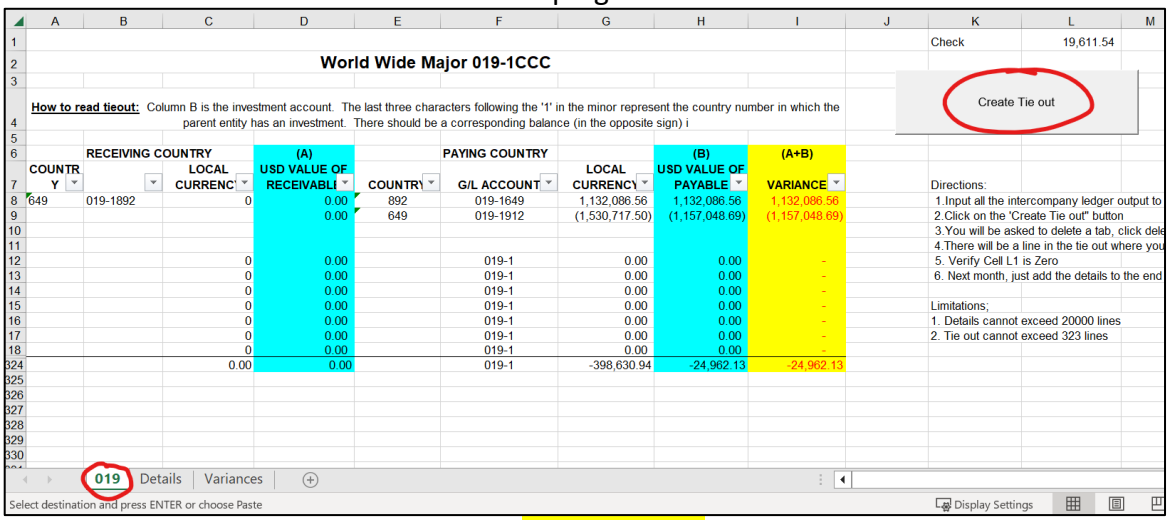
b. Save to the Current Month Box folder under the folder for the specific acquisition that you created in step 10

Step 13. Navigate to the bottom of the "Details" tab of VI-NS1-1 where the Prior Month data ends



Step 14. Copy all the relevant data from VI-1 (NAME REDACTED WD4 file) that you filtered on in step 9 and paste underneath the PM data's on the details tab of VI-NS1-1

Step 15. Go to the top tab labelled with the Major of the tie out (in this case "019") and click the "Create Tie out" macro button on the top right.



Step 16. See details for how the macro runs in Part 2 – Part 9

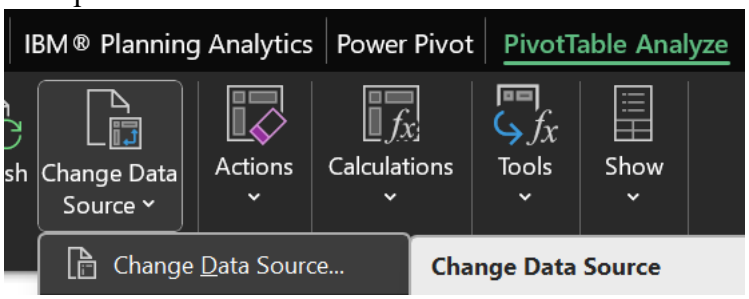
a. Any variances that are identified must be researched, identified, and an action plan created to correct

b. In some instances, there are other lines that weren't pulled into the IC Tieout file

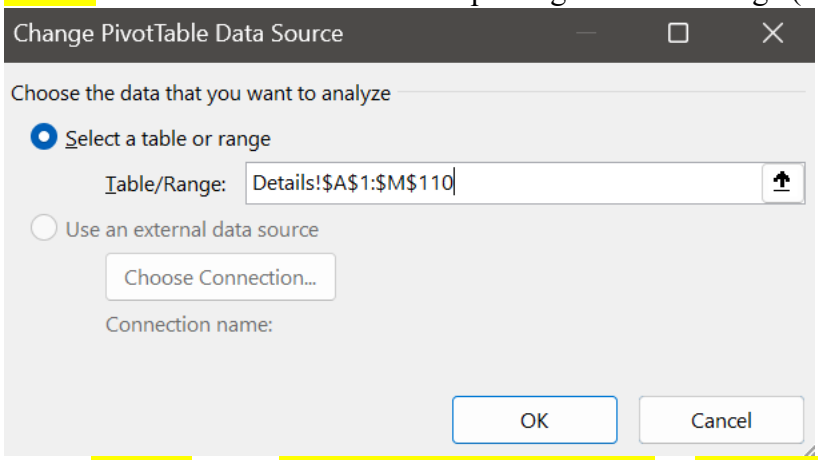
(maybe due to being in an erroneous division or a consolidation entry affect which isn't pulled into the WD4 file)

Part 2 – Change the Data Sources in the Worksheet titled Pivot Tables in VI-NS1-V1

Step 1. Select Cell A1 on the Worksheet titled Pivot Tables in VI-NS1-1.
Step 2. Select Pivot Table Analyze in the Excel Ribbon
Step 3. Select Change Data Source in the Excel Ribbon. Then select Change Data Source… . See example below.



Step 4. In the popup window, update the Table/Range to include all data on the Worksheet titled Details. Select the OK button after updating the Table/Range (see image below).



Step 5. Select Cell G1 in the Worksheet tilted Pivot Tables in VI-NS1-1.
Step 6. Repeat steps 2-4 in Part 2.

Note: The purpose of this Part is to recalculate the amounts within each account within the Pivot Tables. The recalculation takes into account the new Current Month data from VI-1.

Part 3 – Insert data from the Pivot Tables into the Worksheet titled Unsorted Tieout in VI-NS1-V1

Step 1. Activate the Worksheet titled Unsorted Tieout in VI-NS1-1.

Step 2. Delete all data in Rows 7-X, where X is the number of the last populated Row.

Step 3. Select Cell A1 in the Worksheet titled Pivot Tables, then copy all data in the Array, except for the Header (Array A2:E5, in this case) to Clipboard. See example below.

	A	B	C	D	E
1	Row Labels	MAJOR	MINOR	Sum of AMTLOC	Sum of AMTDLR
2	855	019	2892	1824462180	74,985.39
3	649	019	2892	42368.52	31,326.08
4	754	019	2892	88316.11	93,425.20
5	866	019	2892	561854.29	685,546.51

Step 4. Paste data on Clipboard (as Values) into Cell C7 in the Worksheet titled Unsorted Tieout.

Step 5. Select Cell G1 in the Worksheet titled Pivot Tables, then copy all data in the Array, except for the Header (Array G2:K5, in this case) to Clipboard. See example below.

	G	H	I	J	K
1	Row Labels	MAJOR	MINOR	Sum of AMTLOC	Sum of AMTDLR
2	897	019	1176	-93827.91	-93,827.91
3	897	019	1649	-38709.48	-38,709.48
4	897	019	1855	-75119.97	-75,119.97
5	897	019	1866	-725804.3	-725,804.30

Step 6. Paste data on Clipboard (as Values) into Cell K7 in the Worksheet titled Unsorted Tieout.

Note: The purpose of this Part is to create a template for the reconciliation that is not linked to the Pivot Tables. The data from the Pivot Tables is manipulated in the next Parts.

Part 4 – Insert concatenation Formulas into the Worksheet titled Unsorted Tieout in VI-NS1-1

Task 1. Insert the following Formula into Cell A7 in the Worksheet titled Unsorted Tieout in VI-NS1-1:
=C7&"-"&B7

Task 2. Fill down the Formula in Cell A7 to the last populated Row (Row 10, in this case). See examples below.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4																	
5	RECEIVING COUNTRY								PAYING COUNTRY								VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE		(A+B)
7	=C7&"-"&B7		855	019	2892	1,824,462,180.00	74,985.39				897	019	1176	(93,827.91)	(93,827.91)		
8			649	019	2892	42,368.52	31,326.08				897	019	1649	(38,709.48)	(38,709.48)		
9			754	019	2892	88,316.11	93,425.20				897	019	1855	(75,119.97)	(75,119.97)		
10			866	019	2892	561,854.29	685,546.51				897	019	1866	(725,804.30)	(725,804.30)		
11																	
12																	

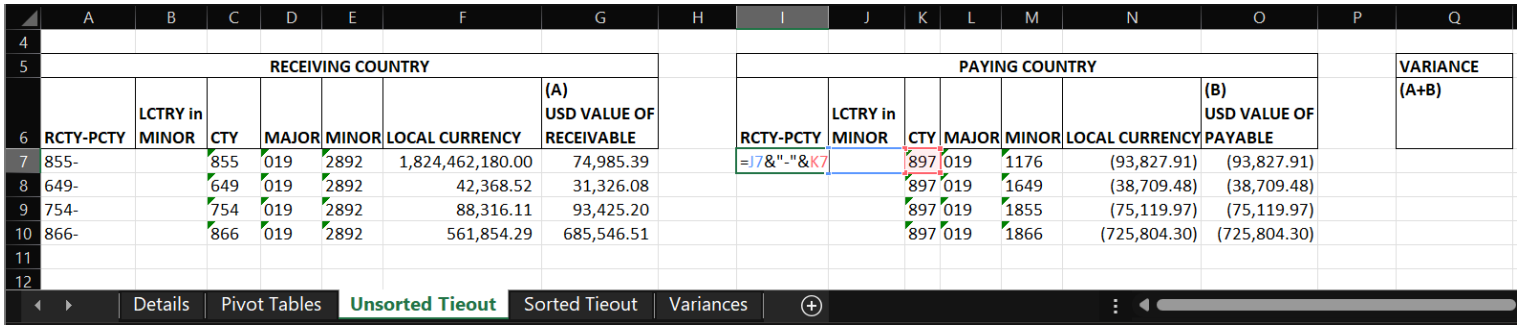
Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4																	
5	RECEIVING COUNTRY								PAYING COUNTRY								VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE		(A+B)
7	855-		855	019	2892	1,824,462,180.00	74,985.39				897	019	1176	(93,827.91)	(93,827.91)		
8	649-		649	019	2892	42,368.52	31,326.08				897	019	1649	(38,709.48)	(38,709.48)		
9	754-		754	019	2892	88,316.11	93,425.20				897	019	1855	(75,119.97)	(75,119.97)		
10	866-		866	019	2892	561,854.29	685,546.51				897	019	1866	(725,804.30)	(725,804.30)		
11																	
12																	

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

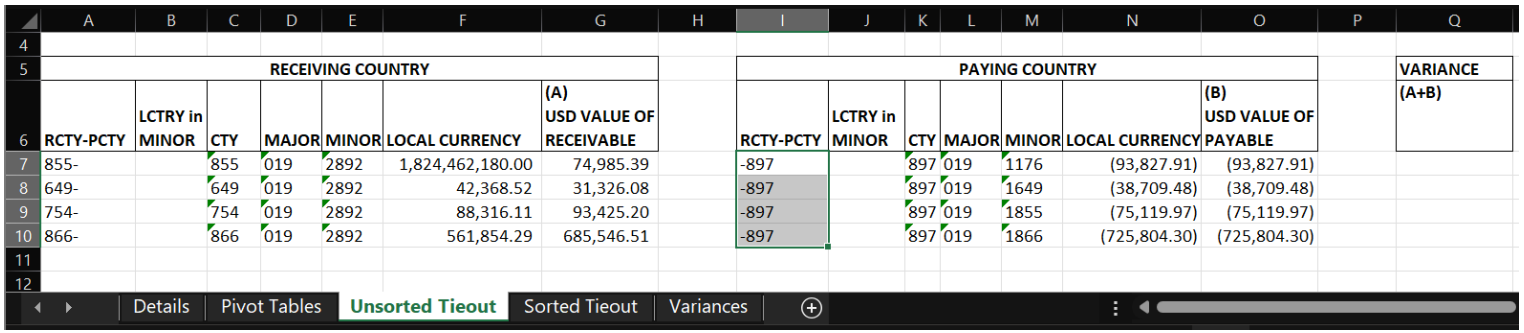
Task 3. Insert the following Formula into Cell I7 in the Worksheet titled Unsorted Tieout in VI-NS1-1:
=J7&"-"&K7

Task 4. Fill down the Formula in Cell I7 to the last populated Row (Row 10, in this case). See examples below.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4																	
5	RECEIVING COUNTRY								PAYING COUNTRY								VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE		(A+B)
7	855-		855	019	2892	1,824,462,180.00	74,985.39		=J7&"-"&K7		897	019	1176	(93,827.91)	(93,827.91)		
8	649-		649	019	2892	42,368.52	31,326.08				897	019	1649	(38,709.48)	(38,709.48)		
9	754-		754	019	2892	88,316.11	93,425.20				897	019	1855	(75,119.97)	(75,119.97)		
10	866-		866	019	2892	561,854.29	685,546.51				897	019	1866	(725,804.30)	(725,804.30)		
11																	
12																	

Details | Pivot Tables | **Unsorted Tieout** | Sorted Tieout | Variances



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4																	
5	RECEIVING COUNTRY								PAYING COUNTRY								VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE		(A+B)
7	855-		855	019	2892	1,824,462,180.00	74,985.39		-897		897	019	1176	(93,827.91)	(93,827.91)		
8	649-		649	019	2892	42,368.52	31,326.08		-897		897	019	1649	(38,709.48)	(38,709.48)		
9	754-		754	019	2892	88,316.11	93,425.20		-897		897	019	1855	(75,119.97)	(75,119.97)		
10	866-		866	019	2892	561,854.29	685,546.51		-897		897	019	1866	(725,804.30)	(725,804.30)		
11																	
12																	

Details | Pivot Tables | **Unsorted Tieout** | Sorted Tieout | Variances

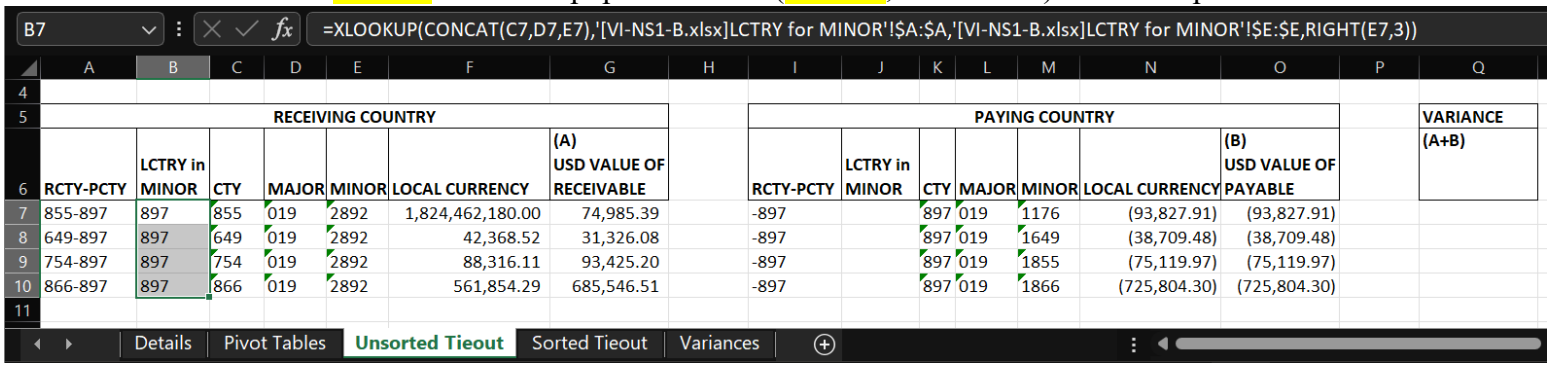
Note: The purpose of this Part is to create unique values for each Row within the two tables. Those unique values are used for matching purposes in the next Parts. The unique values are the concatenations of the Receiving Ledger Country Numbers (RCTY) and the Paying Ledger Country Numbers (PCTY).

Note: An explanation of a concentration (CONCAT) Formula is in Appendix C.

Part 5 – Insert XLOOKUP Formulas into the Worksheet titled Unsorted Tieout in VI-NS1-1

Step 1. Insert the following Formula into Cell B7 in the Worksheet titled Unsorted Tieout in VI-NS1-1:
=XLOOKUP(CONCAT(C7,D7,E7),'[VI-NS1-B.xlsx]LCTRY for MINOR'!$A:$A,'[VI-NS1-B.xlsx]LCTRY for MINOR'!$E:$E,RIGHT(E7,3))

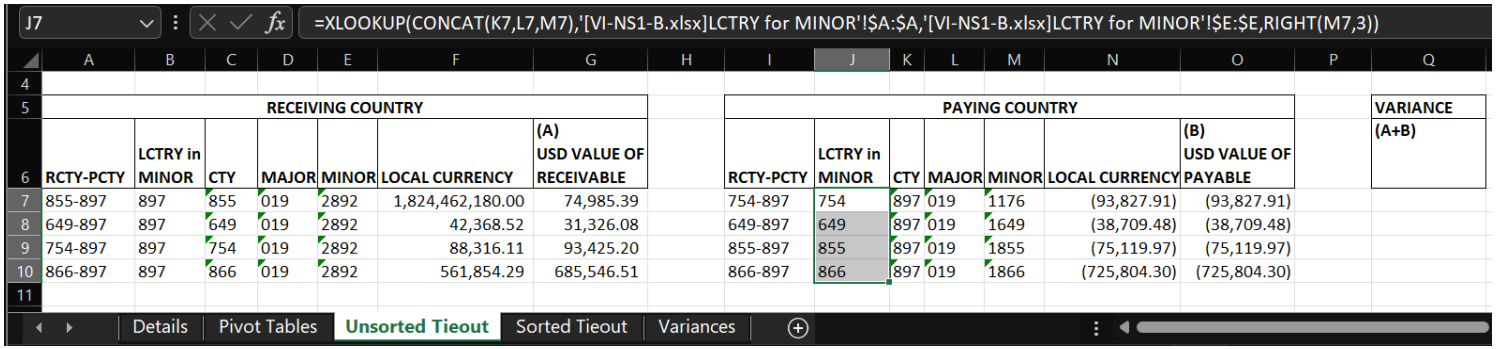
Step 2. Fill down the Formula in Cell B7 to the last populated Row (Row 10, in this case). See examples below.



	RECEIVING COUNTRY								PAYING COUNTRY							VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE	(A+B)
7	855-897	897	855	019	2892	1,824,462,180.00	74,985.39		-897		897	019	1176	(93,827.91)	(93,827.91)	
8	649-897	897	649	019	2892	42,368.52	31,326.08		-897		897	019	1649	(38,709.48)	(38,709.48)	
9	754-897	897	754	019	2892	88,316.11	93,425.20		-897		897	019	1855	(75,119.97)	(75,119.97)	
10	866-897	897	866	019	2892	561,854.29	685,546.51		-897		897	019	1866	(725,804.30)	(725,804.30)	

Step 3. Insert the following Formula into Cell J7 in the Worksheet titled Unsorted Tieout in VI-NS1-1:
=XLOOKUP(CONCAT(K7,L7,M7),'[VI-NS1-B.xlsx]LCTRY for MINOR'!$A:$A,'[VI-NS1-B.xlsx]LCTRY for MINOR'!$E:$E,RIGHT(M7,3))

Step 4. Fill down the Formula in Cell J7 to the last populated Row (Row 10, in this case). See examples below.



J7 =XLOOKUP(CONCAT(K7,L7,M7),'[VI-NS1-B.xlsx]LCTRY for MINOR'!$A:$A,'[VI-NS1-B.xlsx]LCTRY for MINOR'!$E:$E,RIGHT(M7,3))

	RECEIVING COUNTRY								PAYING COUNTRY							VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE	(A+B)
7	855-897	897	855	019	2892	1,824,462,180.00	74,985.39		754-897	754	897	019	1176	(93,827.91)	(93,827.91)	
8	649-897	897	649	019	2892	42,368.52	31,326.08		649-897	649	897	019	1649	(38,709.48)	(38,709.48)	
9	754-897	897	754	019	2892	88,316.11	93,425.20		855-897	855	897	019	1855	(75,119.97)	(75,119.97)	
10	866-897	897	866	019	2892	561,854.29	685,546.51		866-897	866	897	019	1866	(725,804.30)	(725,804.30)	

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

Note: The purpose of this Part is to populate Column B and Column J with values, which will also update the values in Column A and Column I, as you can see above. Column B and Column J are populated with values from VI-NS1-1 or values from VI-NS1-B or values from both VI-NS1-1 and VI-NS1-B. The purpose of the LCTRY in MINOR Columns is to ensure that the RCTY-PCTY Columns only use Ledger Country Numbers as opposed to using a combination of Ledger Country Numbers and Trial Balance Country Numbers.

Note: An explanation of a concentration (CONCAT) Formula is in Appendix C.

Note: An explanation of an XLOOKUP Formula is in Appendix D.

Note: An explanation of a RIGHT Formula is in Appendix E.

Note: See Appendix G for an explanation of the Formula in Part 5 – Step 1.

Note: See Appendix H for an explanation of the Formula in Part 5 – Step 3.

Part 6 – Insert addition Formulas into the Worksheet titled Unsorted Tieout in VI-NS1-1

Step 1. Insert the following Formula into Cell Q7 on the Worksheet titled Unsorted Tieout in VI-NS1-1: = G7+O7.

Step 2. Fill down the Formula in Cell Q7 to the last populated Row (Row 10, in this case). See examples below.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4																	
5	RECEIVING COUNTRY								PAYING COUNTRY								VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE		(A+B)
7	855-897	897	855	019	2892	1,824,462,180.00	74,985.39		754-897	754	897	019	1176	(93,827.91)	(93,827.91)		=G7+O7
8	649-897	897	649	019	2892	42,368.52	31,326.08		649-897	649	897	019	1649	(38,709.48)	(38,709.48)		
9	754-897	897	754	019	2892	88,316.11	93,425.20		855-897	855	897	019	1855	(75,119.97)	(75,119.97)		
10	866-897	897	866	019	2892	561,854.29	685,546.51		866-897	866	897	019	1866	(725,804.30)	(725,804.30)		
11																	

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4																	
5	RECEIVING COUNTRY								PAYING COUNTRY								VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE		(A+B)
7	855-897	897	855	019	2892	1,824,462,180.00	74,985.39		754-897	754	897	019	1176	(93,827.91)	(93,827.91)		(18,842.52)
8	649-897	897	649	019	2892	42,368.52	31,326.08		649-897	649	897	019	1649	(38,709.48)	(38,709.48)		(7,383.40)
9	754-897	897	754	019	2892	88,316.11	93,425.20		855-897	855	897	019	1855	(75,119.97)	(75,119.97)		18,305.23
10	866-897	897	866	019	2892	561,854.29	685,546.51		866-897	866	897	019	1866	(725,804.30)	(725,804.30)		(40,257.79)
11																	

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

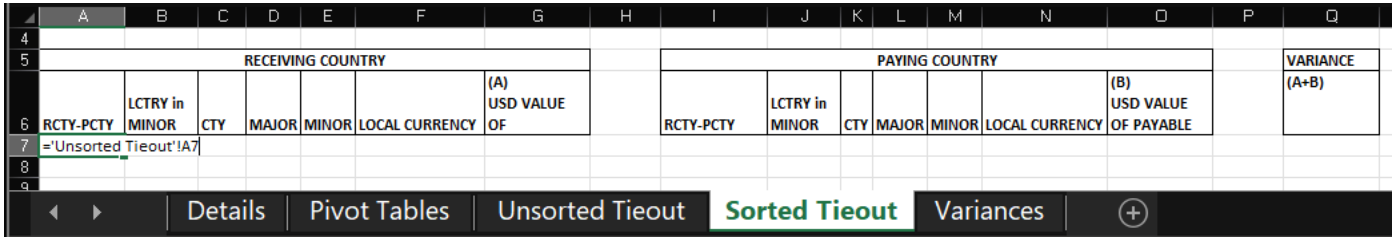
Note: The purpose of this Part is to ensure that value in Cell T1 on the Worksheet titled Unsorted Tieout equals the sum of Column M on the Worksheet titled Details. If that is true, then the value in Cell T2 on the Worksheet titled Unsorted Tieout will equal zero.

Part 7 – Insert reference Formulas into the Worksheet titled Sorted Tieout in VI-NS1-1

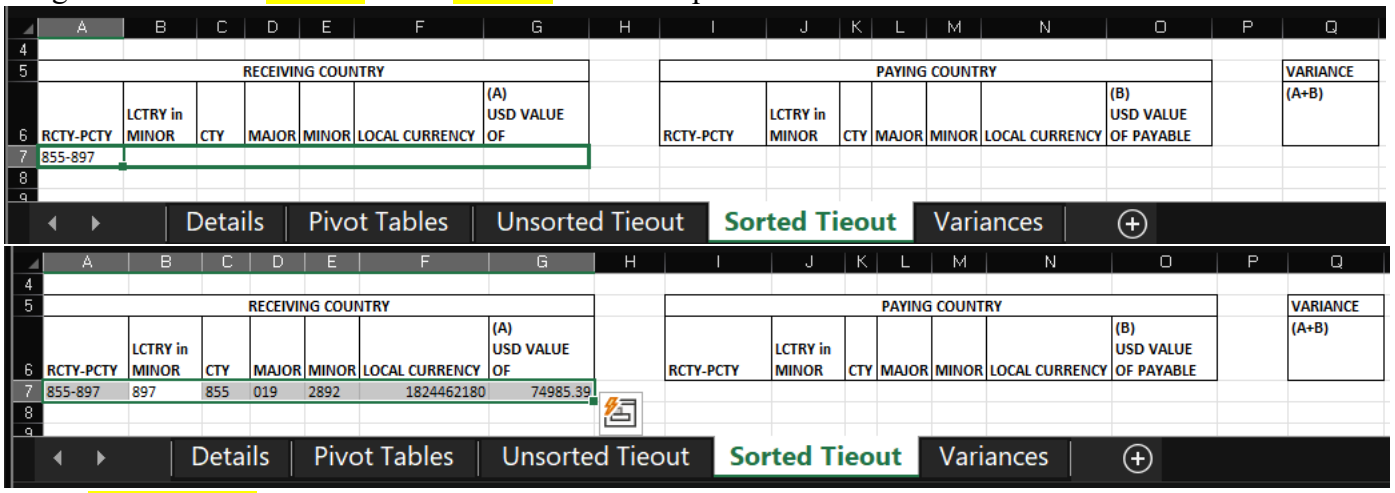
Step 1. Activate the Worksheet titled Sorted Tieout in VI-NS1-1.

Step 2. Delete all data in Rows 7-X, where X is the number of the last populated row.

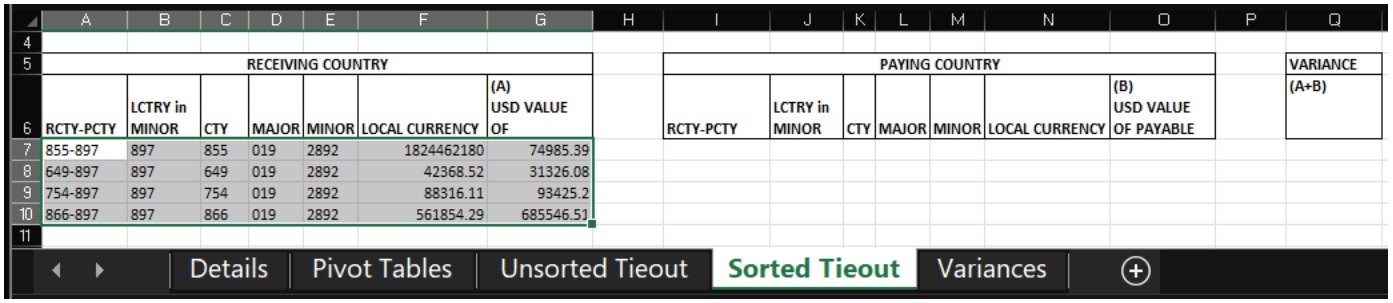
Step 3. Insert the following Formula into Cell A7 in the Worksheet titled Sorted Tieout in VI-NS1-1:
='Unsorted Tieout'!A7



Step 4. Drag the formula in Cell A7 to the Cell G7. See example below

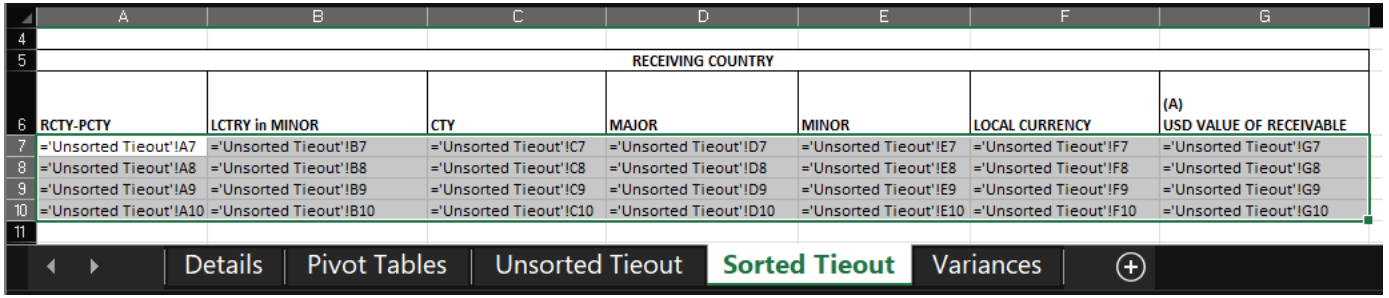


Step 5. Select Array A7:G7 and drag/fill the Formulas down Row X, where X is the last populated Row Number in the Receiving Country Table on the Worksheet titled Unsorted Tieout (Row 10 in this case). See examples below.



	RECEIVING COUNTRY							PAYING COUNTRY							VARIANCE
	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE	(A+B)
7	855-897	897	855	019	2892	1824462180	74985.39								
8	649-897	897	649	019	2892	42368.52	31326.08								
9	754-897	897	754	019	2892	88316.11	93425.2								
10	866-897	897	866	019	2892	561854.29	685546.51								

Details | Pivot Tables | Unsorted Tieout | **Sorted Tieout** | Variances



	RECEIVING COUNTRY						
	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE
7	='Unsorted Tieout'!A7	='Unsorted Tieout'!B7	='Unsorted Tieout'!C7	='Unsorted Tieout'!D7	='Unsorted Tieout'!E7	='Unsorted Tieout'!F7	='Unsorted Tieout'!G7
8	='Unsorted Tieout'!A8	='Unsorted Tieout'!B8	='Unsorted Tieout'!C8	='Unsorted Tieout'!D8	='Unsorted Tieout'!E8	='Unsorted Tieout'!F8	='Unsorted Tieout'!G8
9	='Unsorted Tieout'!A9	='Unsorted Tieout'!B9	='Unsorted Tieout'!C9	='Unsorted Tieout'!D9	='Unsorted Tieout'!E9	='Unsorted Tieout'!F9	='Unsorted Tieout'!G9
10	='Unsorted Tieout'!A10	='Unsorted Tieout'!B10	='Unsorted Tieout'!C10	='Unsorted Tieout'!D10	='Unsorted Tieout'!E10	='Unsorted Tieout'!F10	='Unsorted Tieout'!G10

Details | Pivot Tables | Unsorted Tieout | **Sorted Tieout** | Variances

Note: The purpose of this Part is to begin creating a linked copy of the Worksheet tilted Unsorted Tieout. The Worksheet titled Sorted Tieout will be used to match the RCTY-PCTY Rows in the Receiving Country Table with the RCTY-PCTY Rows in the Paying Country Table. In some cases, a match will not be found. See latter Parts for further explanation.

Part 8 – Insert IF Formulas into the Worksheet titled Sorted Tieout in VI-NS1-1

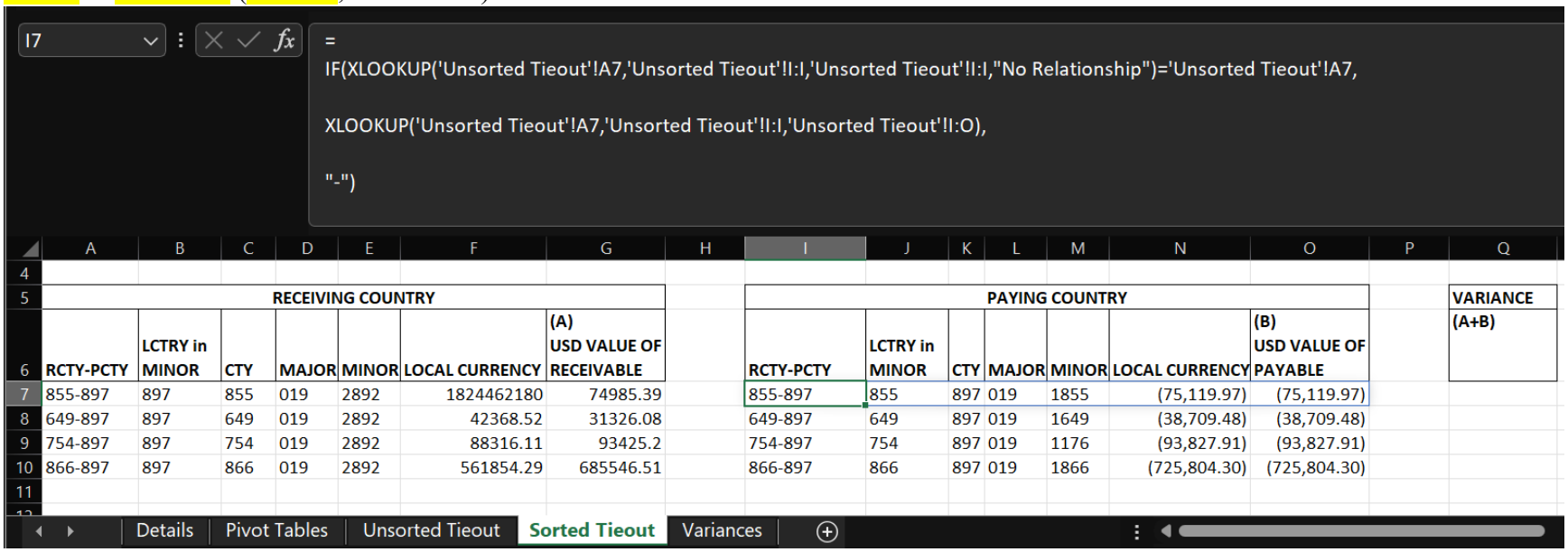
Step 1. Insert the following Formula into Cell I7 in the Worksheet titled Sorted Tieout in VI-NS1-1:

=
IF(XLOOKUP('Unsorted Tieout'!A7,'Unsorted Tieout'!I:I,'Unsorted Tieout'!I:I,"No Relationship")='Unsorted Tieout'!A7,

XLOOKUP('Unsorted Tieout'!A7,'Unsorted Tieout'!I:I,'Unsorted Tieout'!I:O),

"-")

Step 2. Fill down the Formula in Cell I7 to the last populated Row in the Receiving Country Table on the Worksheet titled Sorted Tieout in VI-NS1-1 (Row 10, in this case).



	RECEIVING COUNTRY								PAYING COUNTRY							VARIANCE
	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE		RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE	(A+B)
7	855-897	897	855	019	2892	1824462180	74985.39		855-897	855	897	019	1855	(75,119.97)	(75,119.97)	
8	649-897	897	649	019	2892	42368.52	31326.08		649-897	649	897	019	1649	(38,709.48)	(38,709.48)	
9	754-897	897	754	019	2892	88316.11	93425.2		754-897	754	897	019	1176	(93,827.91)	(93,827.91)	
10	866-897	897	866	019	2892	561854.29	685546.51		866-897	866	897	019	1866	(725,804.30)	(725,804.30)	

Step 3. Insert the following Formula into the first empty Cell in Column I within the Paying Country Table on the Worksheet titled Sorted Tieout in VI-NS1-1 (Cell I11, in this case). Then fill down the Formula X Cells, where X is the number of Rows in the Paying Country Table on the Worksheet titled Unsorted Tieout. See screenshot below as well.

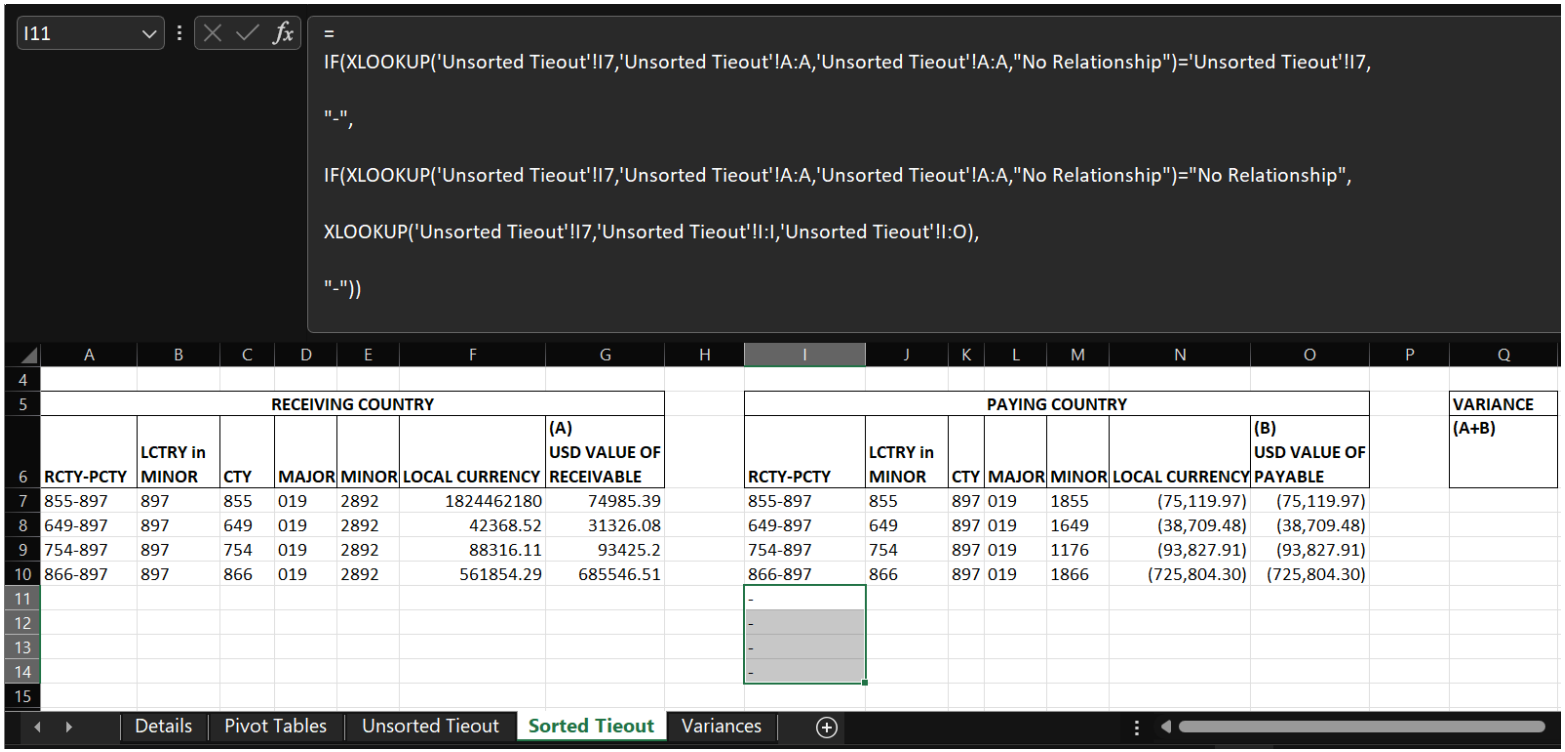
```
=
IF(XLOOKUP('Unsorted Tieout'!I7,'Unsorted Tieout'!A:A,'Unsorted Tieout'!A:A,"No Relationship")='Unsorted Tieout'!I7,

"-",

IF(XLOOKUP('Unsorted Tieout'!I7,'Unsorted Tieout'!A:A,'Unsorted Tieout'!A:A,"No Relationship")="No Relationship",

XLOOKUP('Unsorted Tieout'!I7,'Unsorted Tieout'!I:I,'Unsorted Tieout'!I:O),

"-"))
```



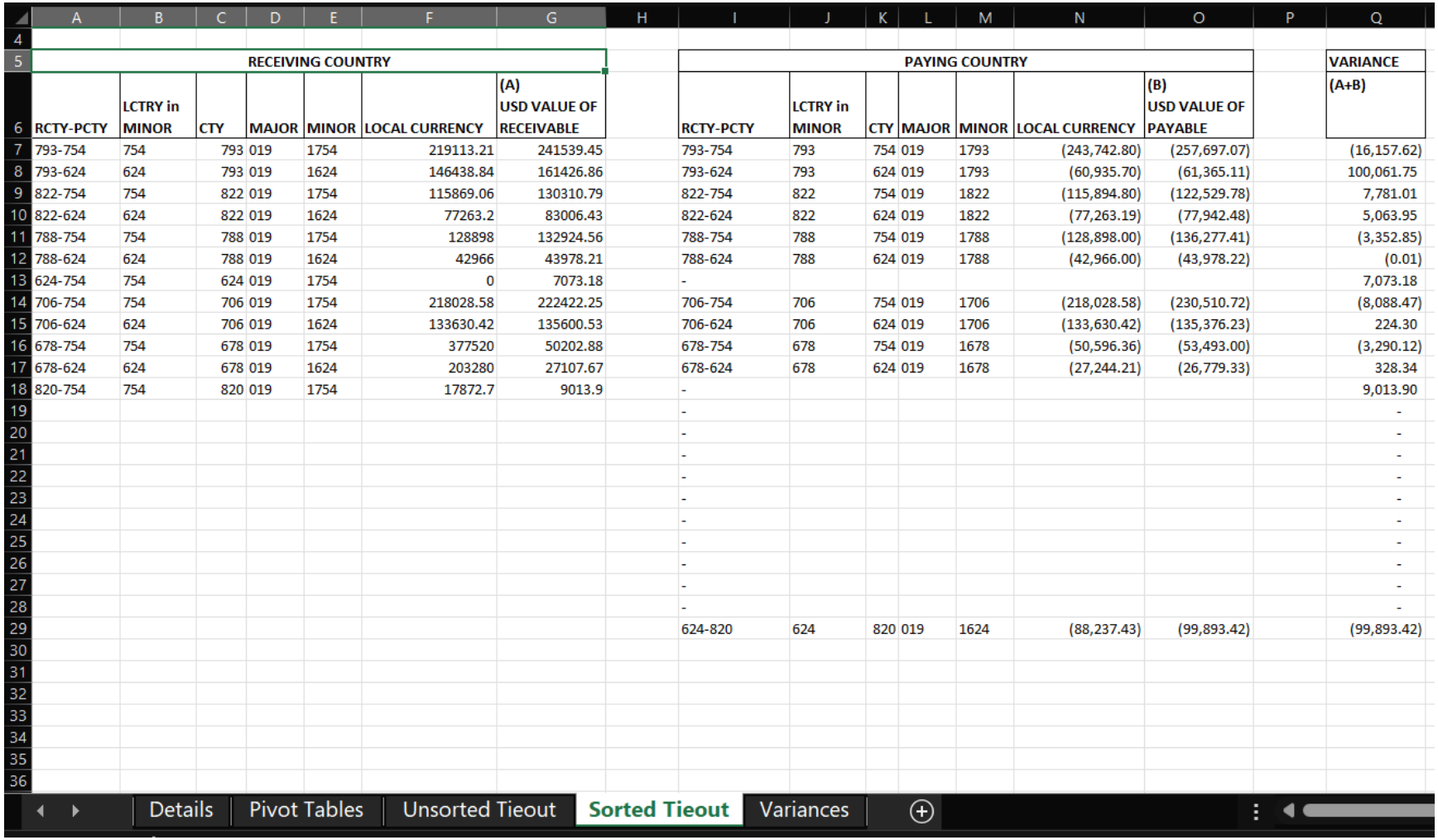
Note:

The purpose of the Part is to match the RCTY-PCTY Rows in the Receiving Country Table with the RCTY-PCTY Rows in the Paying Country Table.

The Formula in Step 1 is designed to find the RCTY-PCTY Values from the Receiving Country Table (on the Worksheet titled Unsorted Tieout) that are also in the Paying Country Table (on the Worksheet titled Unsorted Tieout). In the example above, RCTY-PCTY 855-897 is in both tables, therefore the Formula outputted the entire Row contents of RCTY-PCTY 855-897 from the Paying Country Table (on the Worksheet titled Unsorted Tieout). If the Formula does not find a matching RCTY-PCTY, it will output a dash (-) to signal that there is no matching Paying Country in the Paying Country Table (on the Worksheet titled Unsorted Tieout).

The Formula in Step 3 is designed to find the RCTY-PCTY Values from the Paying Country Table (on the Worksheet titled Unsorted Tieout) that are not in the Receiving Country Table (on the Worksheet titled Unsorted Tieout). In the example above, every RCTY-PCTY that in the Paying Country Table is also within the Receiving Country Table, therefore the Formula outputs a dash (-) to signal so. The example image below, shows an example

of the Formula in Step 3 finding an RCTY-PCTY in the Paying Country Table (on the Worksheet titled Unsorted Tieout) that is not within the Receiving Country Table (on the Worksheet titled Unsorted Tieout). See Row 29 in the image below.



	RECEIVING COUNTRY							PAYING COUNTRY							VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE	(A+B)
7	793-754	754	793	019	1754	219113.21	241539.45	793-754	793	754	019	1793	(243,742.80)	(257,697.07)	(16,157.62)
8	793-624	624	793	019	1624	146438.84	161426.86	793-624	793	624	019	1793	(60,935.70)	(61,365.11)	100,061.75
9	822-754	754	822	019	1754	115869.06	130310.79	822-754	822	754	019	1822	(115,894.80)	(122,529.78)	7,781.01
10	822-624	624	822	019	1624	77263.2	83006.43	822-624	822	624	019	1822	(77,263.19)	(77,942.48)	5,063.95
11	788-754	754	788	019	1754	128898	132924.56	788-754	788	754	019	1788	(128,898.00)	(136,277.41)	(3,352.85)
12	788-624	624	788	019	1624	42966	43978.21	788-624	788	624	019	1788	(42,966.00)	(43,978.22)	(0.01)
13	624-754	754	624	019	1754	0	7073.18	-							7,073.18
14	706-754	754	706	019	1754	218028.58	222422.25	706-754	706	754	019	1706	(218,028.58)	(230,510.72)	(8,088.47)
15	706-624	624	706	019	1624	133630.42	135600.53	706-624	706	624	019	1706	(133,630.42)	(135,376.23)	224.30
16	678-754	754	678	019	1754	377520	50202.88	678-754	678	754	019	1678	(50,596.36)	(53,493.00)	(3,290.12)
17	678-624	624	678	019	1624	203280	27107.67	678-624	678	624	019	1678	(27,244.21)	(26,779.33)	328.34
18	820-754	754	820	019	1754	17872.7	9013.9	-							9,013.90
19								-							-
20								-							-
21								-							-
22								-							-
23								-							-
24								-							-
25								-							-
26								-							-
27								-							-
28								-							-
29								624-820	624	820	019	1624	(88,237.43)	(99,893.42)	(99,893.42)
30															
31															
32															
33															
34															
35															
36															

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

Note: Please let the DSL know if you would like to see the file screenshotted in the image above.

Note: An explanation of an XLOOKUP Formula is in Appendix D.

Note: An explanation of an IF Formula is in Appendix F.

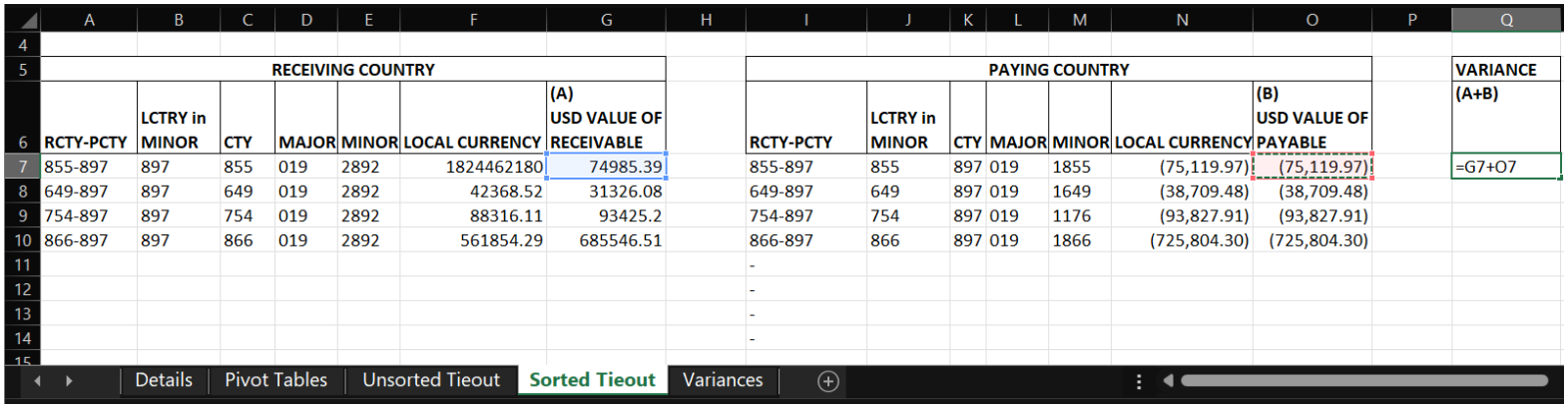
Note: See Appendix J for an explanation of the Formula in Part 8 – Step 1.

Note: See Appendix I for an explanation of the Formula in Part 8 – Step 3.

Part 9 – Insert addition Formulas into the Worksheet titled Sorted Tieout in VI-NS1-1

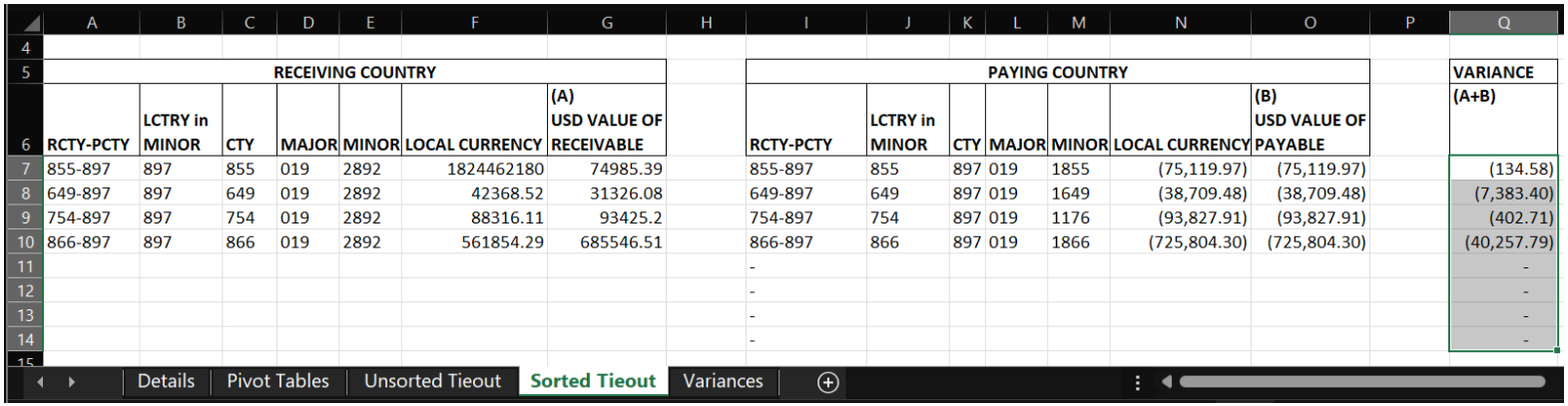
Step 1. Insert the following Formula into Cell Q7 on the Worksheet titled Unsorted Tieout in VI-NS1-1: = G7+O7.

Step 2. Fill down the Formula in Cell Q7 to the last populated Row (Row 14, in this case). See examples below.



	RECEIVING COUNTRY							PAYING COUNTRY							VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE	(A+B)
7	855-897	897	855	019	2892	1824462180	74985.39	855-897	855	897	019	1855	(75,119.97)	(75,119.97)	=G7+O7
8	649-897	897	649	019	2892	42368.52	31326.08	649-897	649	897	019	1649	(38,709.48)	(38,709.48)	
9	754-897	897	754	019	2892	88316.11	93425.2	754-897	754	897	019	1176	(93,827.91)	(93,827.91)	
10	866-897	897	866	019	2892	561854.29	685546.51	866-897	866	897	019	1866	(725,804.30)	(725,804.30)	
11								-							
12								-							
13								-							
14								-							

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances



	RECEIVING COUNTRY							PAYING COUNTRY							VARIANCE
6	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(A) USD VALUE OF RECEIVABLE	RCTY-PCTY	LCTRY in MINOR	CTY	MAJOR	MINOR	LOCAL CURRENCY	(B) USD VALUE OF PAYABLE	(A+B)
7	855-897	897	855	019	2892	1824462180	74985.39	855-897	855	897	019	1855	(75,119.97)	(75,119.97)	(134.58)
8	649-897	897	649	019	2892	42368.52	31326.08	649-897	649	897	019	1649	(38,709.48)	(38,709.48)	(7,383.40)
9	754-897	897	754	019	2892	88316.11	93425.2	754-897	754	897	019	1176	(93,827.91)	(93,827.91)	(402.71)
10	866-897	897	866	019	2892	561854.29	685546.51	866-897	866	897	019	1866	(725,804.30)	(725,804.30)	(40,257.79)
11								-							-
12								-							-
13								-							-
14								-							-

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

Note: The purpose of this Part is to ensure that value in Cell T1 on the Worksheet titled Sorted Tieout equals the sum of Column M on the Worksheet titled Details. If that is true, then the value in Cell T2 on the Worksheet titled Sorted Tieout will equal zero. The main

difference between the Worksheet titled Unsorted Tieout and the Worksheet titled Sorted Tieout is the matching (and nonmatching) of the RCTY-PTCY Values. The view in the Worksheet titled Unsorted Tieout allows accountant to analyze the difference between the Receiving Country Balance and the Paying Country Balance of each matching (or nonmatching) RCTY-PCTY Value.

Part 10 – Save VI-NS1-1 as a New File

Below is an example file. This file shows what VI-NS1-1 should look like after the steps in Part 1 – Part 9 have been executed.

VI-NS1-1 (New).xlsx

Part 11 – Repeat the steps in Part 1 – Part 10 but replace Variable Input VI-NS1-1 with VI-NS1-2

Note: Referring to Appendix K may make this Part easier to understand.

The steps in Part 1 – Part 10 should be repeated with VI-NS1-2 in place of VI-NS1-1. In other words, the steps in Part 1 – Part 10 should be repeated, but all VI-NS1-1 values in Part 1 – Part 10 should be replaced with VI-NS1-2.
The Filter Values used in Part 1 Step 10 should be replaced with the Filter Values for VI-NS1-2 (Row 3 in VI-NS1-A) instead of the Filter Values for VI-NS1-1 (Row 2 in VI-NS1-A). See example below.

- The VI-NS1-A Filter Values for VI-NS1-2 in Column B are *JN* and *NS*. Therefore, the VI-1 Filter Values in Column B are *JN* and *NS*.
- The VI-NS1-A Filter Values for VI-NS1-2 in Column D and Column H are *298* and *09*, respectively. Therefore, the VI-1 Filter Values in Column D and Column H are *298* and *09*, respectively.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**CTY**	**LC**	**LDIV**	**MAJOR**	**MINOR**	**SMIN**	**LERU**	**ACCTMO**	**ACCTYR**	**DESCR1**	**DESCR2**	**AMTLOC**	**AMTDLR**	**Variable Input Number**
2		JN, NS		019				09						VI-NS1-1
3		JN, NS		298				09						VI-NS1-2
4		JN, NS		033, 031				09						VI-NS1-3
5		JN		036				09						VI-NS1-4
6			NS	036				09						VI-NS1-4

*Because there is no NS1 data in MAJOR 298 for ACCTMO 09, there is no Output File to provide at this time.

Part 12 – Repeat the steps in Part 1 – Part 10 but replace Variable Input VI-NS1-1 with VI-NS1-3

Note: Referring to Appendix K may make this Part easier to understand.

The steps in Part 1 – Part 10 should be repeated with VI-NS1-3 in place of VI-NS1-1. In other words, the steps in Part 1 – Part 10 should be repeated, but all VI-NS1-1 values in Part 1 – Part 10 should be replaced with VI-NS1-3.
The Filter Values used in Part 1 Step 10 should be replaced with the Filter Values for VI-NS1-3 (Row 4 in VI-NS1-A) instead of the Filter Values for VI-NS1-1 (Row 2 in VI-NS1-A). See example below.

- Using VI-NS1-A Row 4 as a reference, you can see that the Filter Values in VI-1 should be:
  - *JN and NS* for Column B
  - *033 and 031* for Column D
  - *09* for Column H

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	DESCR1	DESCR2	AMTLOC	AMTDLR	Variable Input Number
2		JN, NS		019				09						VI-NS1-1
3		JN, NS		298				09						VI-NS1-2
4		JN, NS		033, 031				09						VI-NS1-3
5		JN		036				09						VI-NS1-4
6			NS	036				09						VI-NS1-4

*Because there is no NS1 data in MAJORs 033 and 031 for ACCTMO 09, there is no Output File to provide at this time.

Part 13 – Repeat the steps in Part 1 – Part 10 but replace Variable Input VI-NS1-1 with VI-NS1-4

Note: Referring to Appendix K may make this Part easier to understand.

The steps in Part 1 – Part 10 should be repeated with VI-NS1-4 in place of VI-NS1-1. In other words, the steps in Part 1 – Part 10 should be repeated, but all VI-NS1-1 values in Part 1 – Part 10 should be replaced with VI-NS1-4.
The Filter Values used in Part 1 Step 10 should be replaced with the sets of Filter Values for VI-NS1-4 (Rows 5-6 in VI-NS1-A) instead of the Filter Values for VI-NS1-1 (Row 2 in VI-NS1-A). See example below.

- Using VI-NS1-A Row 5 as a reference, you can see that the first set of Filter Values in VI-1 should be:
  - *JN* for Column B
  - *036* for Column D
  - *09* for Column H

- Using VI-NS1-A Row 6 as a reference, you can see that the second set of Filter Values in VI-1 should be:
  - *NS* for Column C
  - *036* for Column D
  - *09* for Column H

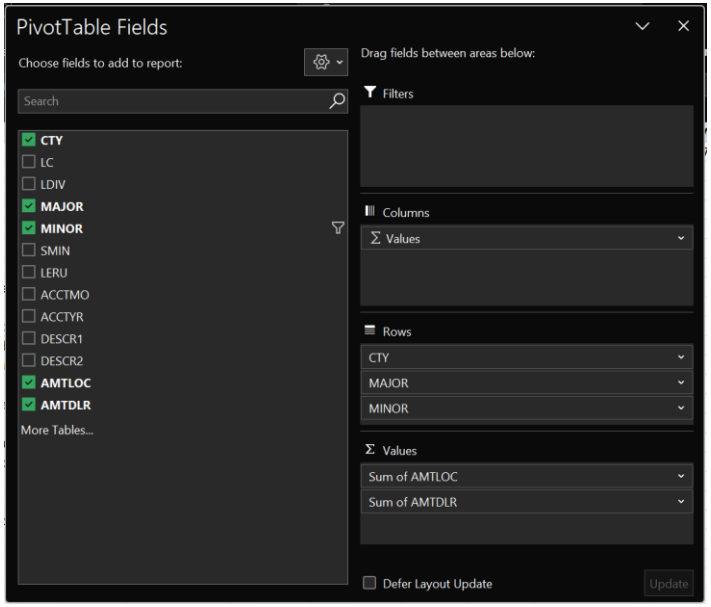
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	DESCR1	DESCR2	AMTLOC	AMTDLR	Variable Input Number
2		JN, NS		019				09						VI-NS1-1
3		JN, NS		298				09						VI-NS1-2
4		JN, NS		033, 031				09						VI-NS1-3
5		JN		036				09						VI-NS1-4
6			NS	036				09						VI-NS1-4

*Because there is no NS1 data in MAJOR 036 for ACCTMO 09, there is no Output File to provide at this time.

Appendix A – How to Create Pivot Tables in Excel (using VI-NS1-1 as an example)

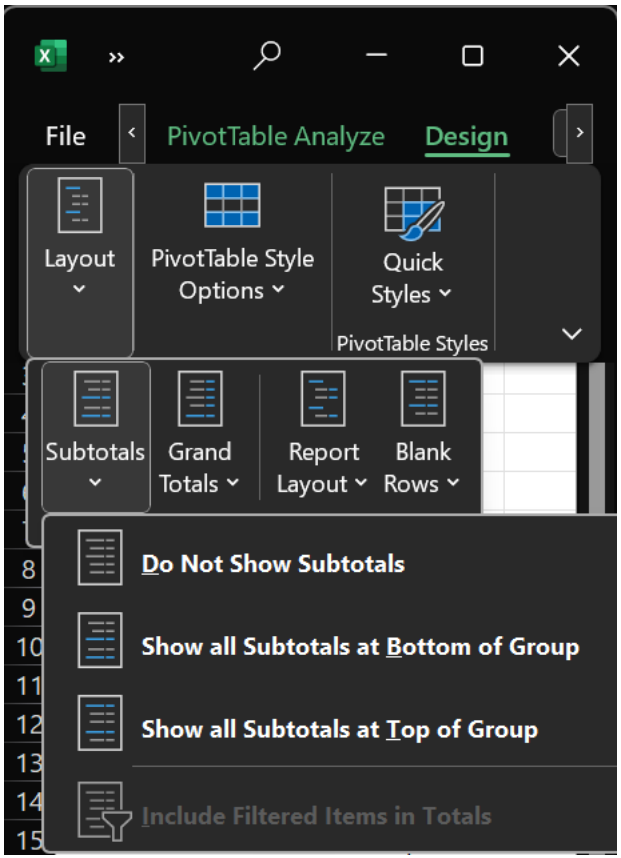
The instructions below are for both Pivot Tables on the Worksheet titled Pivot Tables.

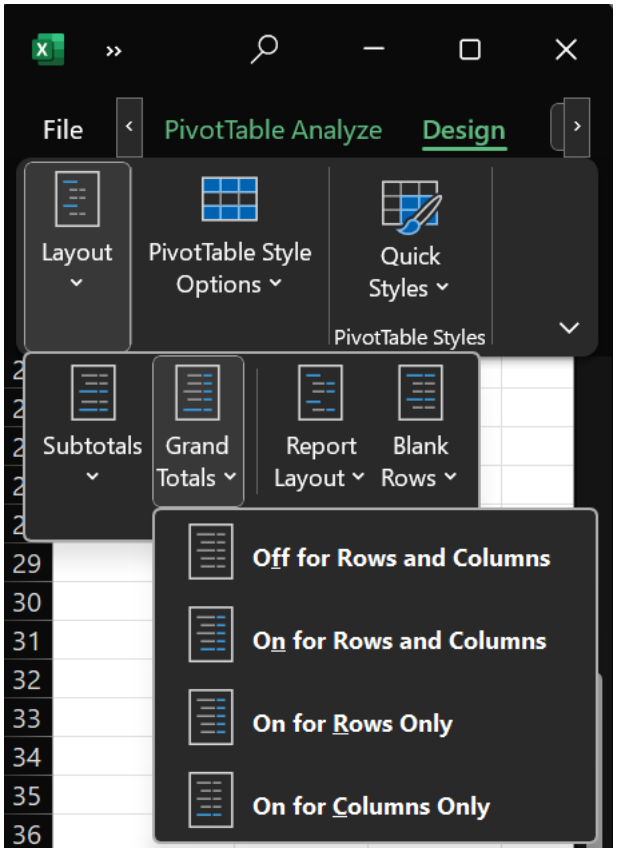
1. Create a Pivot Table in Excel (use the entire data table/range in the Worksheet titled Details).
    - Excel Ribbon – Insert>Pivot Table>From Table of Range
2. The screenshot below outlines the Pivot Table Fields to select (for Variable Inputs VI-NS1-1, VI-NS1-2, VI-NS1-3, and VI-NS1-4).

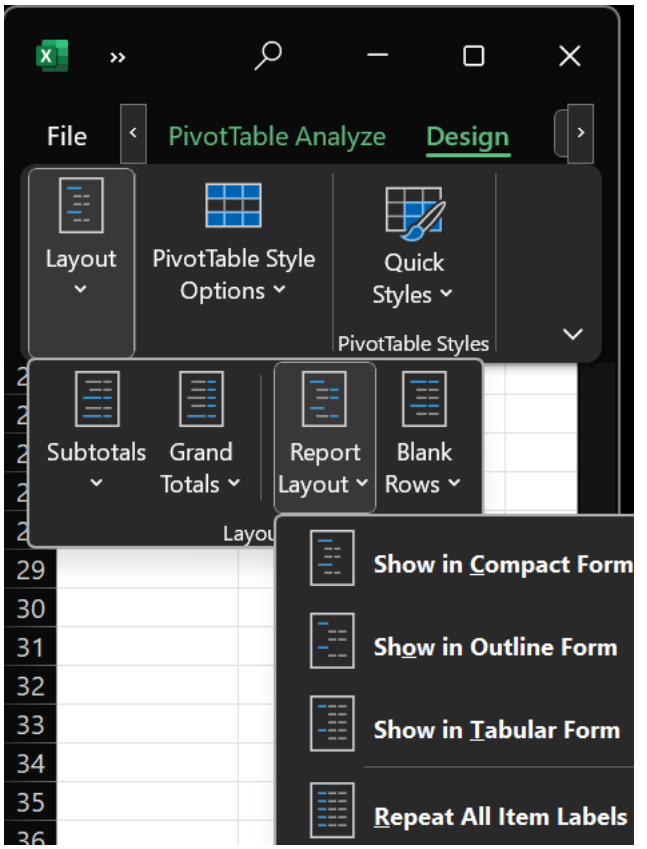


3. On the Excel Ribbon, select the following options:
    - Design (the Pivot Table has to be selected)> Subtotals - Do Not Show Subtotals>Grand Totals - Off for Rows and Columns>Report Layout - Show in Tabular Form>Report Layout - Repeat All Item Labels. See screenshots below for a visual reference.

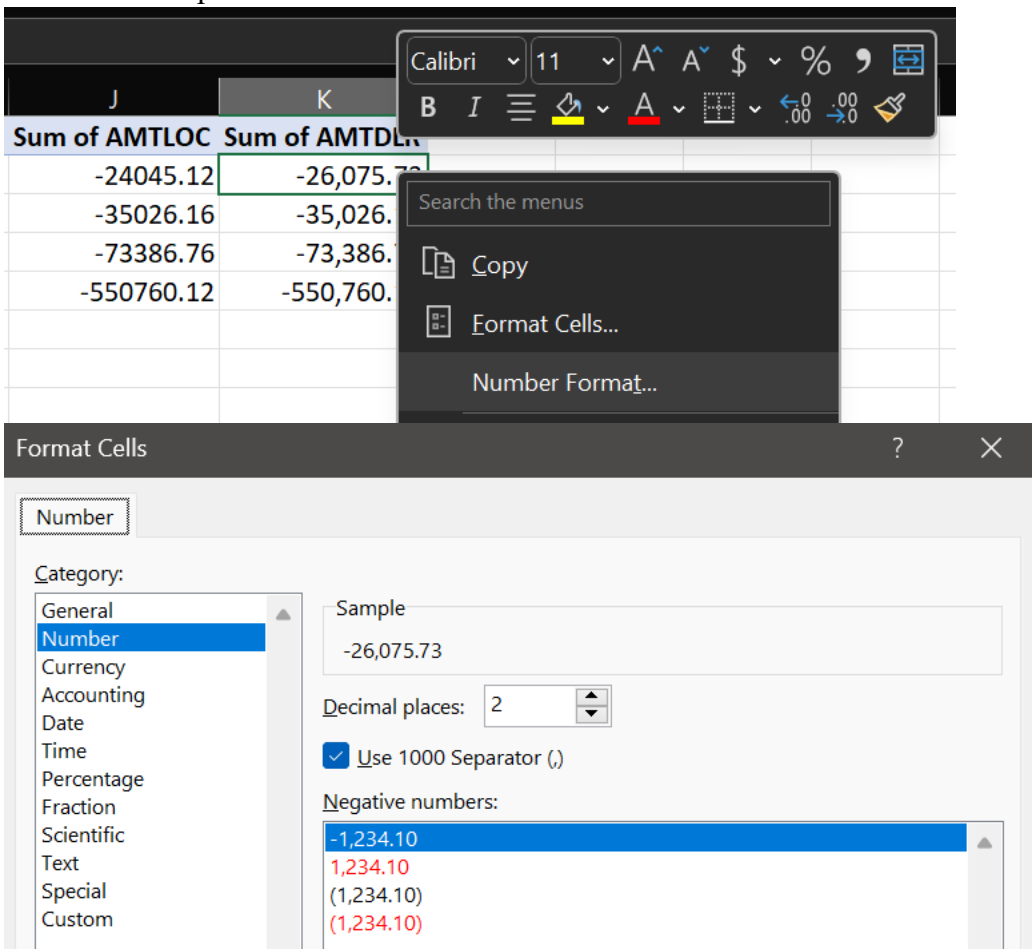
•


File
PivotTable Analyze
Design
Layout
PivotTable Style Options
Quick Styles
PivotTable Styles
Subtotals
Grand Totals
Report Layout
Blank Rows
Do Not Show Subtotals
Show all Subtotals at Bottom of Group
Show all Subtotals at Top of Group
Include Filtered Items in Totals


File
PivotTable Analyze
Design
Layout
PivotTable Style Options
Quick Styles
PivotTable Styles
Subtotals
Grand Totals
Report Layout
Blank Rows
Off for Rows and Columns
On for Rows and Columns
On for Rows Only
On for Columns Only

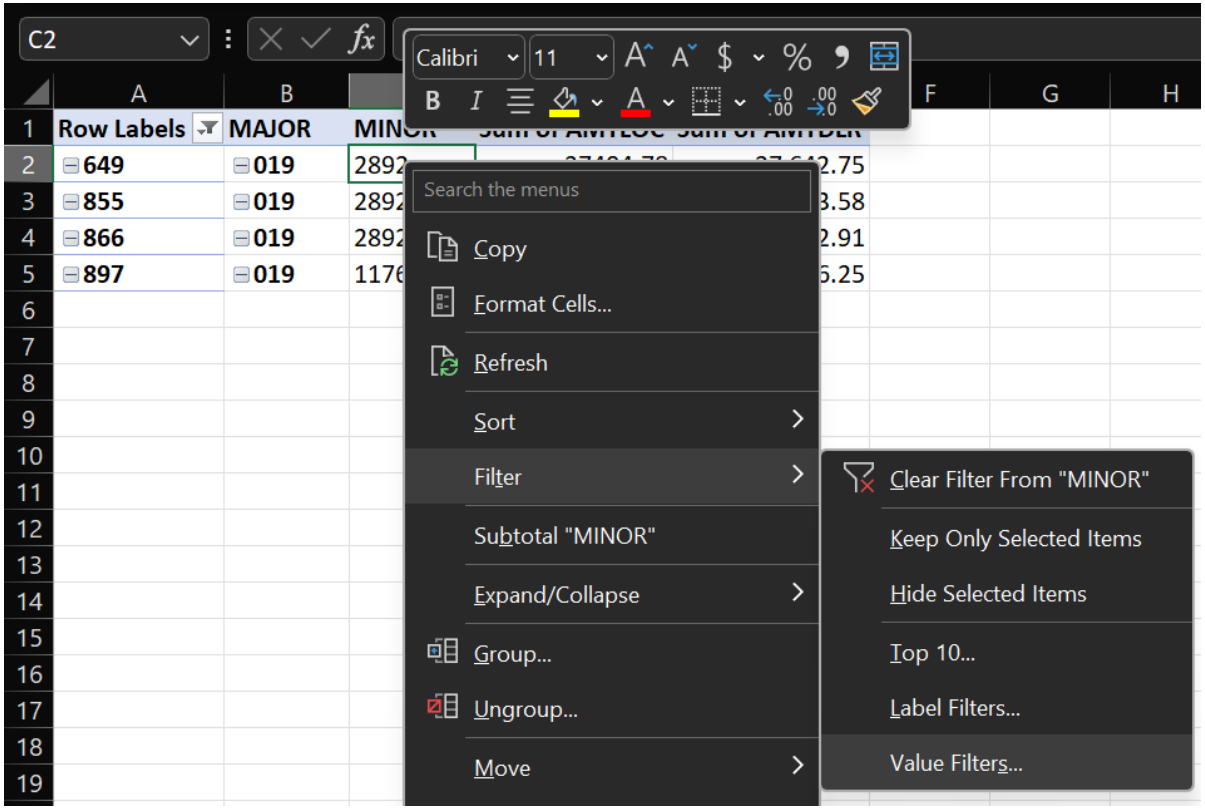

File
PivotTable Analyze
Design
Layout
PivotTable Style Options
Quick Styles
PivotTable Styles
Subtotals
Grand Totals
Report Layout
Blank Rows
Show in Compact Form
Show in Outline Form
Show in Tabular Form
Repeat All Item Labels

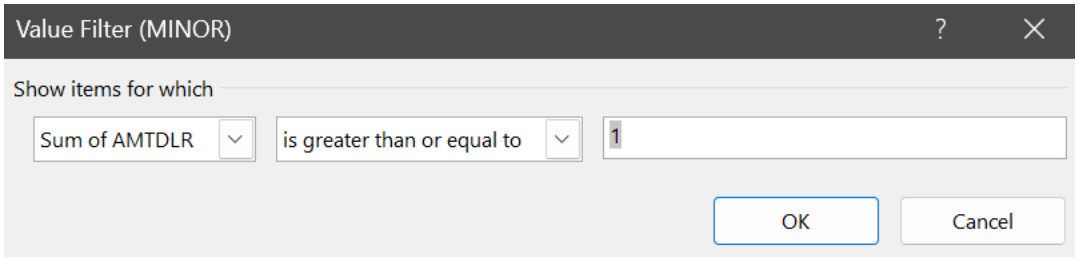
4. The Number Format for the *Sum of* Columns should be *Category = Number*, *Decimal Places = 2*, *Use 100 Separator (,) = YES*. See example below.



The instructions below are only for the Pivot Table in Columns A-E on the Worksheet titled Pivot Tables.

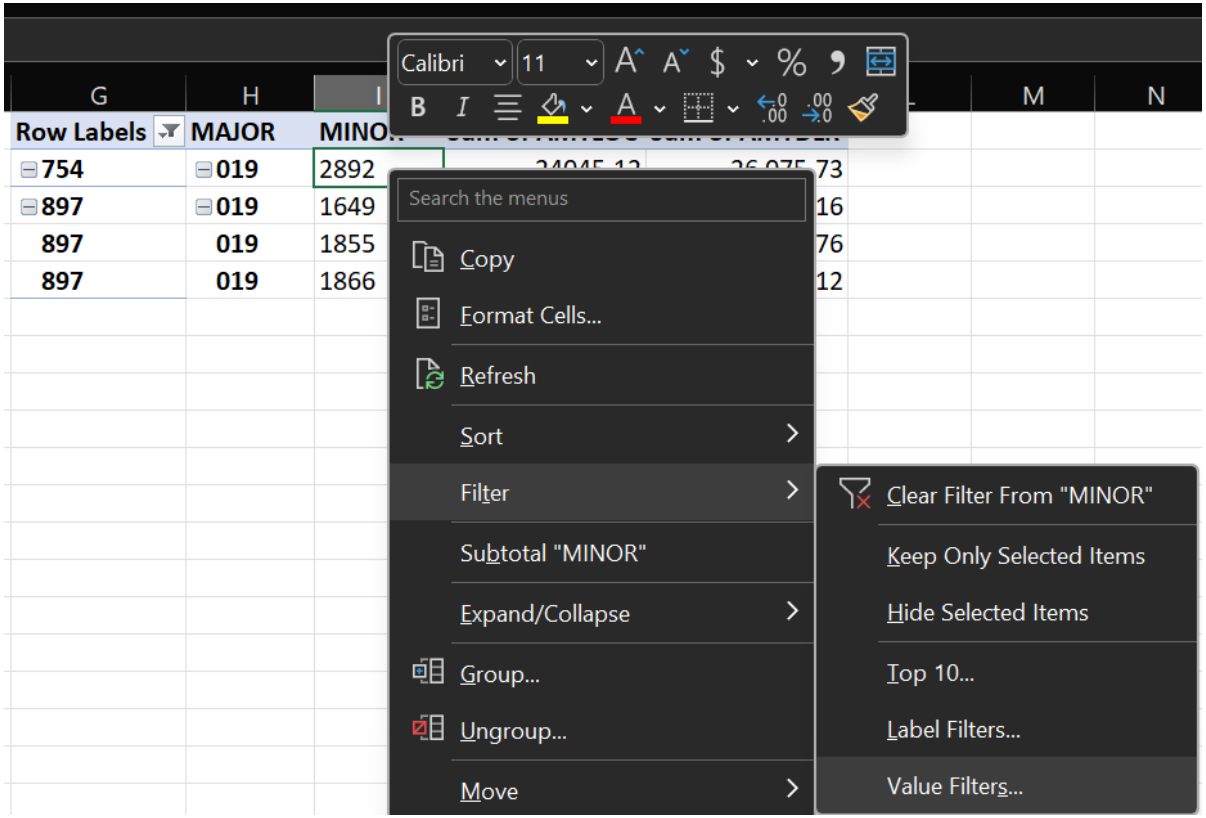
5. Select the Cell underneath the Header titled Minor (Cell C2), then select *Value Filters*, then select *Sum of AMTDLR*, then select *is greater than or equal to*, then type *1*. See example below.

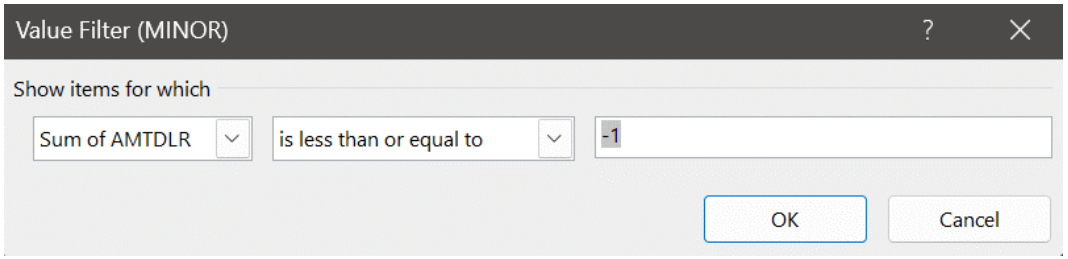




The instructions below are only for the Pivot Table in Columns G-K on the Worksheet titled Pivot Tables.

6. Select the Cell underneath the Header titled Minor (Cell I2), then select *Value Filters*, then select *Sum of AMTDLR*, then select *is less than or equal to*, then type *-1*. See example below.





Appendix B – How to Create Pivot Tables in SQL (Fundamental Example)

The Pivot Tables in Appendix A can also be created in SQL.
Below is a fundamental example query that shows how to create the Pivot Table in Columns A-E on Worksheet titled Pivot Tables in VI-NS1-1.

```
SELECT
CTY, MAJOR, MINOR, SUM_of_AMTLOC, SUM_of _AMTDLR
FROM
VI-NS1-1
GROUP BY
CTY, MAJOR, MINOR HAVING SUM >= 1
```

*The From Statement uses the data in VI-NS1-1on the Worksheet titled Details.

Below is a fundamental example query that shows how to create the Pivot Table in Columns G-K on Worksheet titled Pivot Tables in VI-NS1-1.

```
SELECT
CTY, MAJOR, MINOR, SUM_of_AMTLOC, SUM_of _AMTDLR
FROM
VI-NS1-1
GROUP BY
CTY, MAJOR, MINOR HAVING SUM <= -1
```

*The From Statement uses the data in VI-NS1-1 on the Worksheet titled Details.

Appendix C – Explanation of CONCAT (concatenation) Formula

CONCAT (concatenation) Formulas in Microsoft Excel are designed to create a value by connecting values together. For example, assume that Cell Value 1 is A, Cell Value 2 is B, and Cell Value 3 is C. The concatenation of Cell Values 1, 2, and 3 would be ABC.

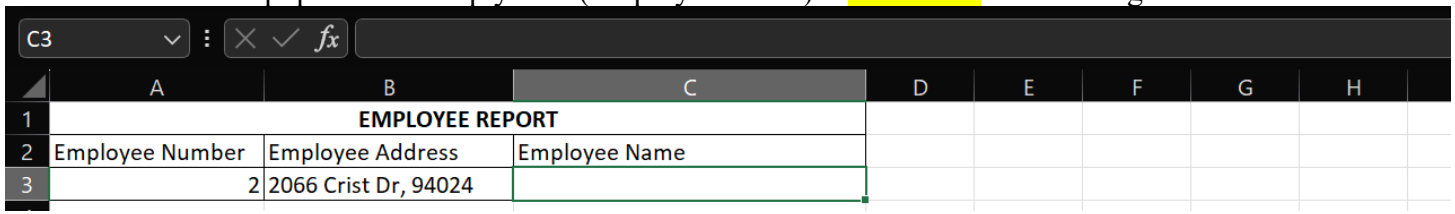
There are several ways to create concatenations in Excel. In this PDD, we use the following Excel Concatenation Formulas to create unique values (e.g., the concatenation of CTY, MAJOR, MINOR in VI-NS1-B, Column A, Worksheet titled LCTRY for MINOR).

- =CONCAT(Cell#, Cell#)
- = Cell#&Cell#

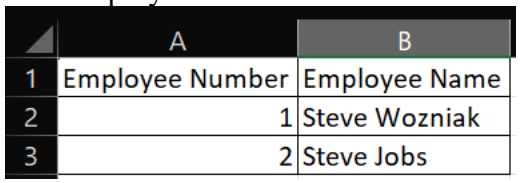
Appendix D – Explanation of XLOOKUP Formula

Lookup Formulas in Microsoft Excel (XLOOKUP, VLOOKUP, HLOOKUP) are designed to [1] Search for a Value (a *lookup_value*) in a Specified Data Table called a *lookup_array* and [2] output a Value (a *return_value*) that is in a Specified Data Table called a *return_array*. Please see the example below.

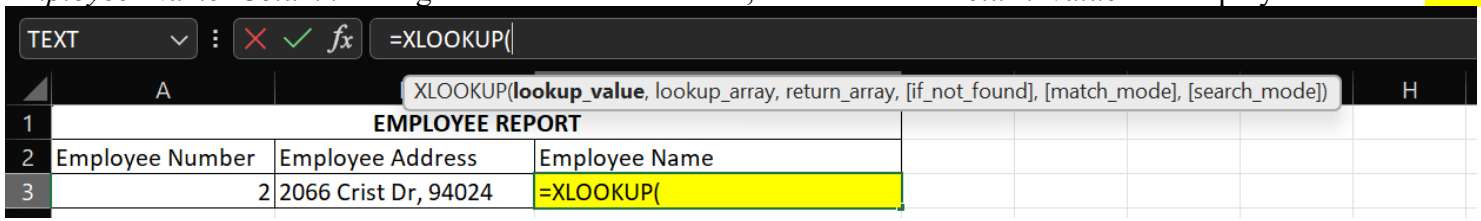
Assume we want to populate the empty Cell (Employee Name)in Column C below using an XLOOKUP Formula.

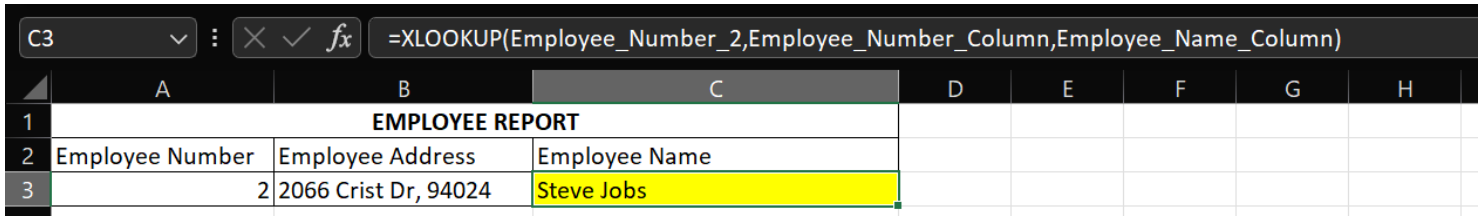


The Employee Name is in the data table below.

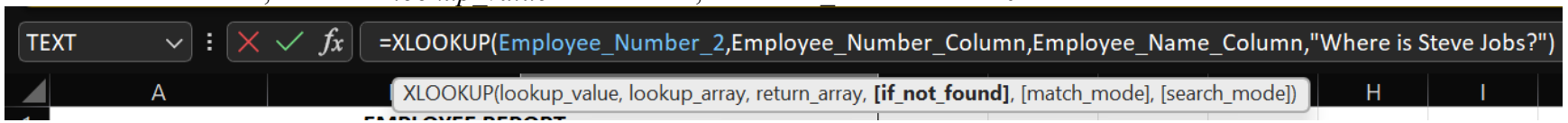


In this example, the *lookup_value* is *Employee_Number_2*, the *lookup_array* is *Employee_Number_Column*, and the *return_array* is *Employee_Name_Column*. Using an XLOOKUP Formula, we can see the *return_value* for Employee Name is Steve Jobs.



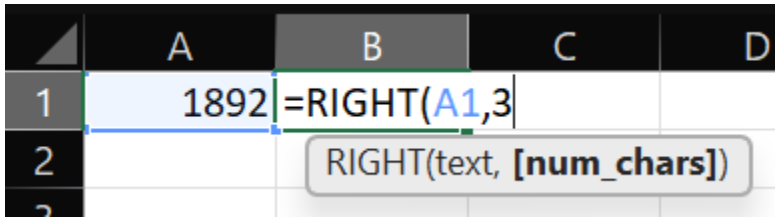


Note that XLOOKUP Formula has a part called *[if not found]* (see image below). In that field, you can insert any value, such as "0" or "Where is Steve Jobs", and if the *lookup_value* is not found, the return_value will be "0" or "Where is Steve Jobs?".



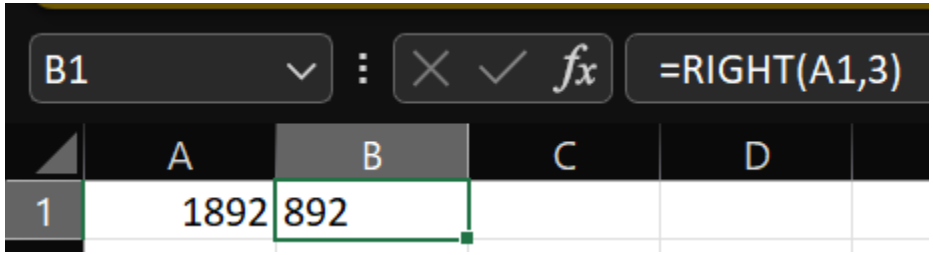
Appendix E – Explanation of RIGHT Formula

RIGHT Formulas in Microsoft Excel are designed to extract numbers or letters from a specific Cell. For example, assume Cell A1 has the Value *1892*. The RIGHT Formula could be used to extract any number of digits from Cell A1, starting on the right side of Cell A1. For example, assume we want to extract the digits *892* from Cell A1, then we could insert The RIGHT Formula into Cell A2, written like so: =RIGHT(Cell A1, 3).



text = the Cell Number, such as Cell A1

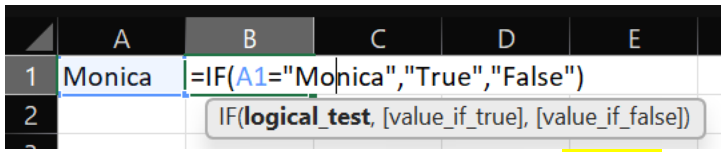
[num_chars] = the number of characters to extract from the text (Cell A1).



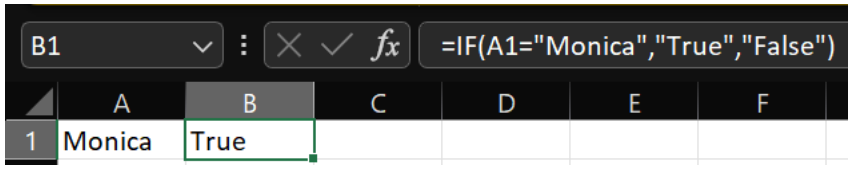
Appendix F – Explanation of IF Formula

IF Formulas in Microsoft Excel are designed to output a certain Value based on a certain condition. For example, if Cell A1 contains the word *Monica,* then output the word *True* in Cell A2. If Cell A1 does not contain the word *Monica,* then output the word *False* in Cell A2.

Below is the syntax for the IF Formula in Microsoft Excel.



Excel searches for the condition *Monica* in Cell A1 (which is referred to as a logical_test). If the logical_test is true, Excel will output the word *True* in Cell B1. If the logical_test is false, Excel will output the word *False* in Cell B1.



Appendix G – Explanation of Formula in Part 5 – Step 1

Below is an explanation of the XOOKUP Formula from Part 5 – Step 1.That formula is inserted below for visual reference.

> =XLOOKUP(CONCAT(C7,D7,E7),'[VI-NS1-B.xlsx]LCTRY for MINOR'!$A:$A,'[VI-NS1-B.xlsx]LCTRY for MINOR'!$E:$E,RIGHT(E7,3))

The *lookup_value* is the concatenation of Cells C7, D7, and E7 in the Receiving Country Table located in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *lookup_array* is Column A in VI-NS1_B on the Worksheet titled LCTRY for MINOR.
The *return_array* is Column E in VI-NS1_B on the Worksheet titled LCTRY for MINOR
The *[if not found] Value* is the last three digits of a Value within Column E in VI-NS1-1 on the Worksheet titled Unsorted Tieout.

Appendix H – Explanation of Formula in Part 5 – Step 3

Below is an explanation of the XOOKUP Formula from Part 5 – Step 3.That formula is inserted below for visual reference.

> =XLOOKUP(CONCAT(K7,L7,M7),'[VI-NS1-B.xlsx]LCTRY for MINOR'!$A:$A,'[VI-NS1-B.xlsx]LCTRY for MINOR'!$E:$E,RIGHT(M7,3))

The *lookup_value* is the concatenation of Cells K7, L7, and M7 in the Paying Country Table located in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *lookup_array* is Column A in VI-NS1_B on the Worksheet titled LCTRY for MINOR.
The *return_array* is Column E in VI-NS1_B on the Worksheet titled LCTRY for MINOR
The *[if not found] Value* is the last three digits of a Value within Column M in VI-NS1-1 on the Worksheet titled Unsorted Tieout.

Appendix J – Explanation of Formula in Part 8 – Step 1

Below is an explanation of the XOOKUP Formula from Part 8 – Step 1.That formula is inserted below for visual reference.

```
=
IF(XLOOKUP('Unsorted Tieout'!A7,'Unsorted Tieout'!I:I,'Unsorted Tieout'!I:I,"No Relationship")='Unsorted Tieout'!A7,

XLOOKUP('Unsorted Tieout'!A7,'Unsorted Tieout'!I:I,'Unsorted Tieout'!I:O),

"-")
```

The first line of the Formula is a logical_test. If an RCTY-PTCY Value from the Receiving Country Table on the Worksheet titled Unsorted Tieout is found in the Paying Country Table on the Worksheet titled Unsorted Tieout, then…

The second line of the Formula is the instruction for a logical_test that is true. If the the logical_test above is true, then output the entire Row contents of the matching RCTY-PCTY in the Paying Country Table on the Worksheet titled Unsorted Tieout.

The third line of the Formula is the instruction for a logical_test that is false. If the the logical_test above is false, then output a dash (-) to signal that there is no match.

In the first line of the Formula:
The *lookup_value* is Cell A7 in the Receivable Country Table located in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *lookup_array* is Column I in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *return_array* is Column I in VI-NS1-1 on the Worksheet titled Unsorted Tieout
The *[if not found] Value* is "No Relationship," a text value that basically states that there is no match.

In second line of the Formula:
The *lookup_value* is Cell A7 in the Receivable Country Table located in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *lookup_array* is Column I in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *return_array* is Column I through Column O in VI-NS1-1 on the Worksheet titled Unsorted Tieout

The *[if not found] Value* is not used.

Appendix I – Explanation of Formula in Part 8 – Step 3

Below is an explanation of the XOOKUP Formula from Part 8 – Step 3.That formula is inserted below for visual reference.

```
=
IF(XLOOKUP('Unsorted Tieout'!I7,'Unsorted Tieout'!A:A,'Unsorted Tieout'!A:A,"No Relationship")='Unsorted Tieout'!I7,

"-",

IF(XLOOKUP('Unsorted Tieout'!I7,'Unsorted Tieout'!A:A,'Unsorted Tieout'!A:A,"No Relationship")="No Relationship",

XLOOKUP('Unsorted Tieout'!I7,'Unsorted Tieout'!I:I,'Unsorted Tieout'!I:O),

"-"))
```

The first line of the Formula is a logical_test. If an RCTY-PTCY Value from the Paying Country Table on the Worksheet titled Unsorted Tieout is found in the Receiving Country Table on the Worksheet titled Unsorted Tieout, then…

The second line of the Formula is the instruction for a logical_test that is true. If the the logical_test above is true, then output a dash (-) to signal that the Formula in Part 8 – Step 1 already took that RCTY-PCTY into account.

The third line of the Formula is the instruction for a logical_test that is false. That instruction is a second logical_test. If an RCTY-PTCY Value from the Paying Country Table on the Worksheet titled Unsorted Tieout is not found in the Receiving Country Table on the Worksheet titled Unsorted Tieout, then…

The fourth line of the Formula is the instruction for the second logical_test, if the test is true. If the the logical_test above is true, then output the entire Row contents of the RCTY-PCTY in the Paying Country Table on the Worksheet titled Unsorted Tieout that is not within the Receiving Country Table on the Worksheet titled Unsorted Tieout.

The fifth line of the Formula is the instruction for the second logical_test, if the test is false. If the logical_test above is false, then output a dash (-) to signal that there are no other RCTY-RCTY Values to test.

In the first line of the Formula:
The *lookup_value* is Cell I7 in the Paying Country Table located in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *lookup_array* is Column A in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *return_array* is Column A in VI-NS1-1 on the Worksheet titled Unsorted Tieout
The *[if not found] Value* is "No Relationship," a text value that basically states that there is no match.

In the third line of the Formula:
The *lookup_value* is Cell I7 in the Paying Country Table located in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *lookup_array* is Column A in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *return_array* is Column A in VI-NS1-1 on the Worksheet titled Unsorted Tieout
The *[if not found] Value* is "No Relationship," a text value that basically states that there is no match.

In fifth line of the Formula:
The *lookup_value* is Cell I7 in the Paying Country Table located in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *lookup_array* is Column I in VI-NS1-1 on the Worksheet titled Unsorted Tieout.
The *return_array* is Column I through Column O in VI-NS1-1 on the Worksheet titled Unsorted Tieout

Appendix K – Alternative Part 1 Instructions

Part 1 – Filter data in VI-1 by using the Filter Values in VI-NS1-A. Then Append the Filtered Data from VI-1 to the data in VI-NS1-1.

Step 1. Open VI-1.

Step 2. Open VI-NS1-A.

Step 3. Open VI-NS1-1.

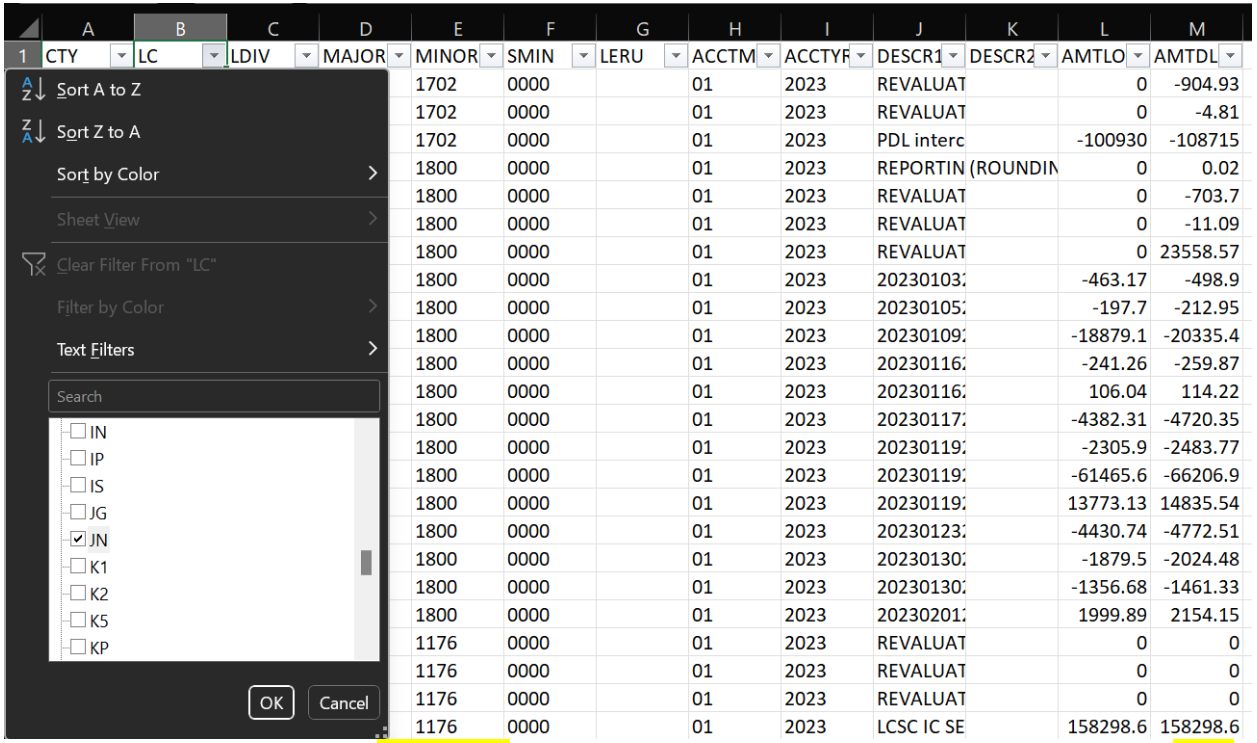
Step 4. Open VI-NS1-B.

Step 5. Filter data in VI-1 by referencing the Filter Values in VI-NS1-A that are associated with VI-NS1-1.

For example, the VI-NS1-A Filter Values for Column B are *JN* and *NS*. See VI-NS1-A excerpt below.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	DESCR1	DESCR2	AMTLOC	AMTDLR	Variable Input Number
2		JN, NS		019				09						VI-NS1-1

Therefore, the VI-1 Filter Values for Column B should be *JN* and *NS* (see VI-1 excerpt below).

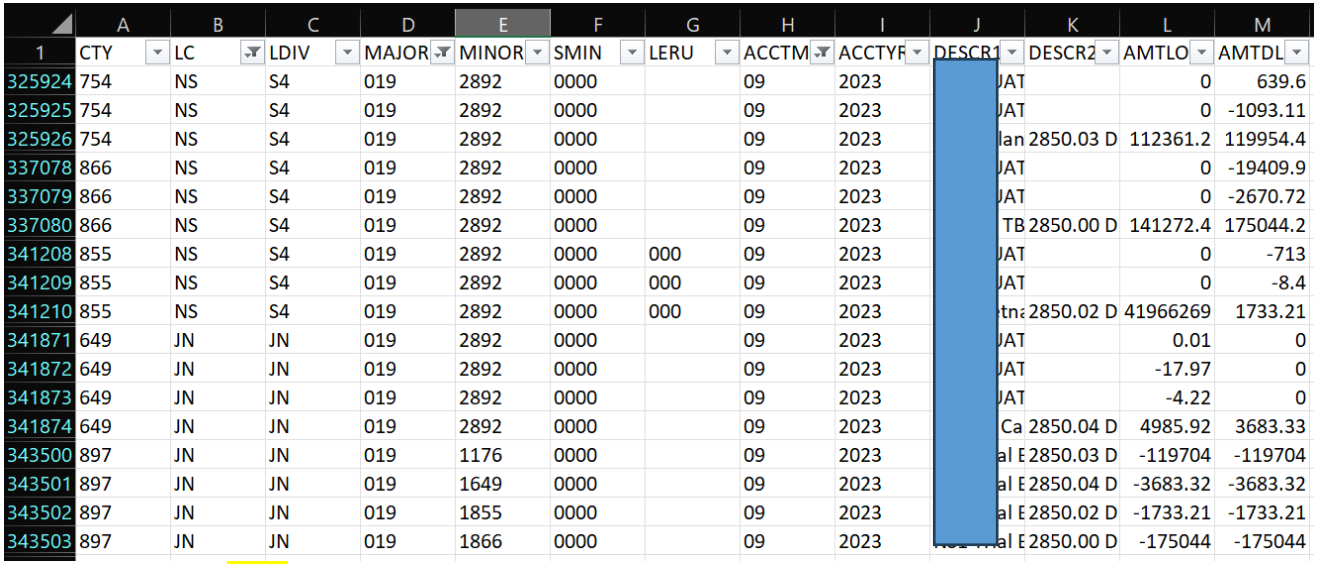


	A	B	C	D	E	F	G	H	I	J	K	L	M
1	CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTM	ACCTYR	DESCR1	DESCR2	AMTLO	AMTDL
					1702	0000		01	2023	REVALUAT		0	-904.93
					1702	0000		01	2023	REVALUAT		0	-4.81
					1702	0000		01	2023	PDL interc		-100930	-108715
					1800	0000		01	2023	REPORTIN	(ROUNDIN	0	0.02
					1800	0000		01	2023	REVALUAT		0	-703.7
					1800	0000		01	2023	REVALUAT		0	-11.09
					1800	0000		01	2023	REVALUAT		0	23558.57
					1800	0000		01	2023	20230103		-463.17	-498.9
					1800	0000		01	2023	20230105		-197.7	-212.95
					1800	0000		01	2023	20230109		-18879.1	-20335.4
					1800	0000		01	2023	20230116		-241.26	-259.87
					1800	0000		01	2023	20230116		106.04	114.22
					1800	0000		01	2023	20230117		-4382.31	-4720.35
					1800	0000		01	2023	20230119		-2305.9	-2483.77
					1800	0000		01	2023	20230119		-61465.6	-66206.9
					1800	0000		01	2023	20230119		13773.13	14835.54
					1800	0000		01	2023	20230123		-4430.74	-4772.51
					1800	0000		01	2023	20230130		-1879.5	-2024.48
					1800	0000		01	2023	20230130		-1356.68	-1461.33
					1800	0000		01	2023	20230201		1999.89	2154.15
					1176	0000		01	2023	REVALUAT		0	0
					1176	0000		01	2023	REVALUAT		0	0
					1176	0000		01	2023	REVALUAT		0	0
					1176	0000		01	2023	LCSC IC SE		158298.6	158298.6

By using the Filter Values in VI-NS1-A as a reference, you can see that the Filter Values in VI-1 should be:

- *JN and NS* for Column B
- *019* for Column D
- *09* for Column H

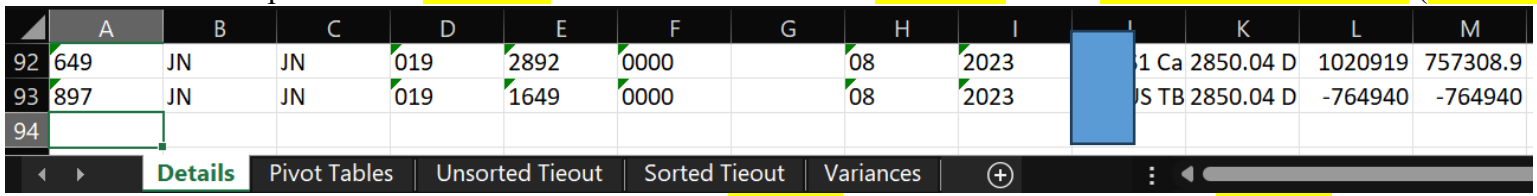
Those Filter Values placed on the data within VI-1 provide the following 18 Rows (including the Header Row).



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTM	ACCTYR	DESCR1	DESCR2	AMTLO	AMTDL
325924	754	NS	S4	019	2892	0000		09	2023	UAT		0	639.6
325925	754	NS	S4	019	2892	0000		09	2023	UAT		0	-1093.11
325926	754	NS	S4	019	2892	0000		09	2023	lan	2850.03 D	112361.2	119954.4
337078	866	NS	S4	019	2892	0000		09	2023	UAT		0	-19409.9
337079	866	NS	S4	019	2892	0000		09	2023	UAT		0	-2670.72
337080	866	NS	S4	019	2892	0000		09	2023	TB	2850.00 D	141272.4	175044.2
341208	855	NS	S4	019	2892	0000	000	09	2023	UAT		0	-713
341209	855	NS	S4	019	2892	0000	000	09	2023	UAT		0	-8.4
341210	855	NS	S4	019	2892	0000	000	09	2023	tn	2850.02 D	41966269	1733.21
341871	649	JN	JN	019	2892	0000		09	2023	UAT		0.01	0
341872	649	JN	JN	019	2892	0000		09	2023	UAT		-17.97	0
341873	649	JN	JN	019	2892	0000		09	2023	UAT		-4.22	0
341874	649	JN	JN	019	2892	0000		09	2023	Ca	2850.04 D	4985.92	3683.33
343500	897	JN	JN	019	1176	0000		09	2023	al E	2850.03 D	-119704	-119704
343501	897	JN	JN	019	1649	0000		09	2023	al E	2850.04 D	-3683.32	-3683.32
343502	897	JN	JN	019	1855	0000		09	2023	al E	2850.02 D	-1733.21	-1733.21
343503	897	JN	JN	019	1866	0000		09	2023	al E	2850.00 D	-175044	-175044

Step 6. Copy the filtered data in VI-1 (excluding the Header Row) to Clipboard.

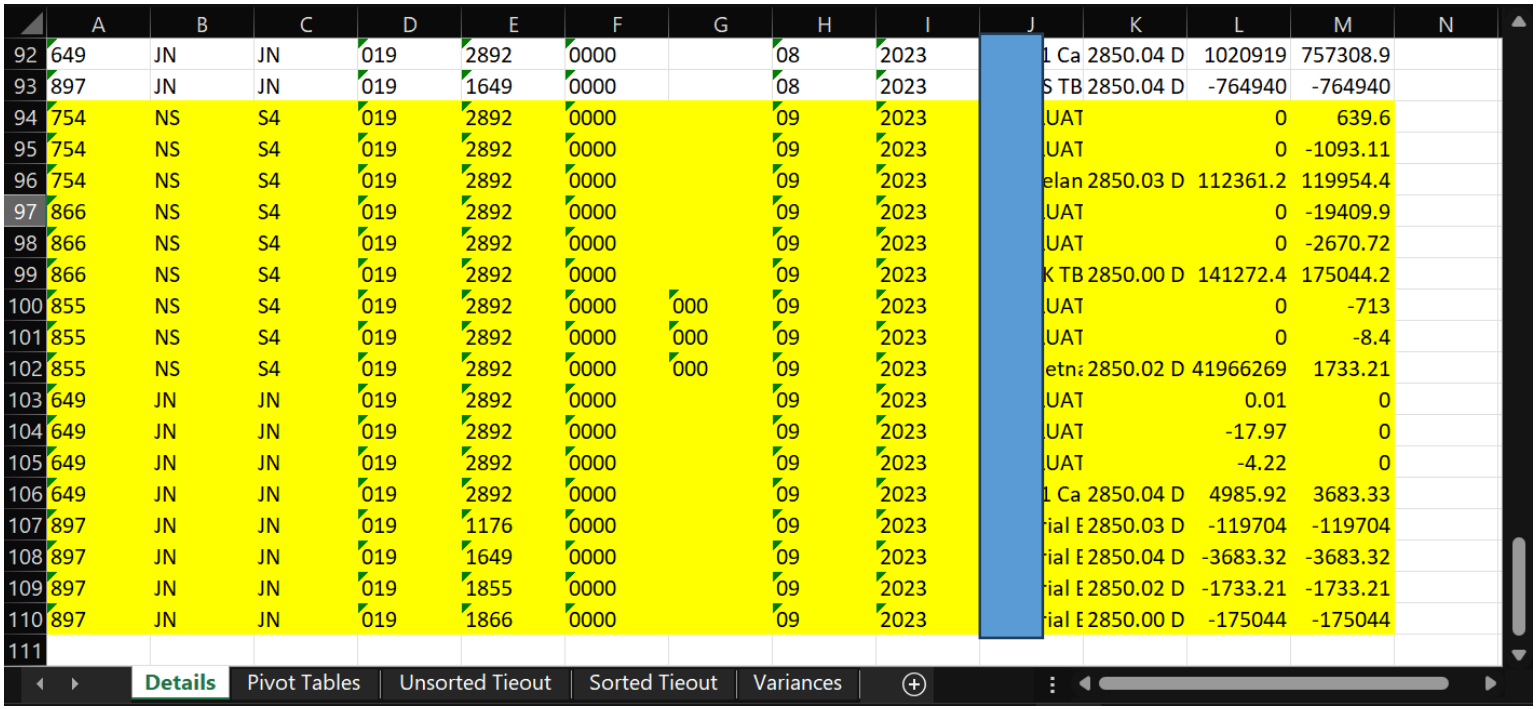
Step 7. Paste the data on Clipboard into VI-NS1-1 on the first blank row in Column A on the Worksheet titled Details (Cell A94).



	A	B	C	D	E	F	G	H	I	J	K	L	M
92	649	JN	JN	019	2892	0000		08	2023	1 Ca	2850.04 D	1020919	757308.9
93	897	JN	JN	019	1649	0000		08	2023	S TB	2850.04 D	-764940	-764940
94													

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

In this example, after pasting the data on Clipboard into Cell A94, the data table should end at Row 110 per the screenshot below (the yellow color was used for visual effect and is not necessary).



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
92	649	JN	JN	019	2892	0000		08	2023	1 Ca	2850.04 D	1020919	757308.9	
93	897	JN	JN	019	1649	0000		08	2023	S TB	2850.04 D	-764940	-764940	
94	754	NS	S4	019	2892	0000		09	2023	UAT		0	639.6	
95	754	NS	S4	019	2892	0000		09	2023	UAT		0	-1093.11	
96	754	NS	S4	019	2892	0000		09	2023	elan	2850.03 D	112361.2	119954.4	
97	866	NS	S4	019	2892	0000		09	2023	UAT		0	-19409.9	
98	866	NS	S4	019	2892	0000		09	2023	UAT		0	-2670.72	
99	866	NS	S4	019	2892	0000		09	2023	K TB	2850.00 D	141272.4	175044.2	
100	855	NS	S4	019	2892	0000	000	09	2023	UAT		0	-713	
101	855	NS	S4	019	2892	0000	000	09	2023	UAT		0	-8.4	
102	855	NS	S4	019	2892	0000	000	09	2023	etn	2850.02 D	41966269	1733.21	
103	649	JN	JN	019	2892	0000		09	2023	UAT		0.01	0	
104	649	JN	JN	019	2892	0000		09	2023	UAT		-17.97	0	
105	649	JN	JN	019	2892	0000		09	2023	UAT		-4.22	0	
106	649	JN	JN	019	2892	0000		09	2023	1 Ca	2850.04 D	4985.92	3683.33	
107	897	JN	JN	019	1176	0000		09	2023	ial E	2850.03 D	-119704	-119704	
108	897	JN	JN	019	1649	0000		09	2023	ial E	2850.04 D	-3683.32	-3683.32	
109	897	JN	JN	019	1855	0000		09	2023	ial E	2850.02 D	-1733.21	-1733.21	
110	897	JN	JN	019	1866	0000		09	2023	ial E	2850.00 D	-175044	-175044	
111														

Details | Pivot Tables | Unsorted Tieout | Sorted Tieout | Variances

Note to Develoers:
Please note that the example above uses Filter Values (in VI-NS1-A Row 2) that are unique to VI-NS1-1, per Column N in VI-NS1-A.

If the Developers were to perform the steps above on VI-NS1-4 instead of VI-NS1-1, the Filters Values that are unique to VI-NS1-4 (per Column N in VI-NS1-A) would need to be used. See screenshot from VI-NS1-A below (it is further explained in Part 11 – Part 13).

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	CTY	LC	LDIV	MAJOR	MINOR	SMIN	LERU	ACCTMO	ACCTYR	DESCR1	DESCR2	AMTLOC	AMTDLR	Variable Input Number
2		JN, NS		019				09						VI-NS1-1
3		JN, NS		298				09						VI-NS1-2
4		JN, NS		033, 031				09						VI-NS1-3
5		JN		036				09						VI-NS1-4
6			NS	036				09						VI-NS1-4

Notice that VI-NS1-1 has one Set of Filter Values in Row 2.

Also notice that VI-NS1-4 has two Sets of Filter Values (one Set in Row 5 and the other Set in Row 6). Each Set of Filter Values for VI-NS1-4, when applied to the data in VI-1, will produce a unique Array of data. Each unique Array of data must be copied and pasted into the Worksheet titled Details in VI-NS1-4 (see Part 11 – Part 13 for further explanation).