# Report Model Structure and Fundamental Accounting Concept Relations Validation using Pesseract

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This walks you through validation of the fundamental accounting concept relations using the Pesseract digital financial reporting tool in the Viewer/Validation mode. This demonstration uses an XBRL-based public company financial filing which was submitted to the U.S. SEC. Local files and IFRS filings can be validated in the same manner.

STEP 1: *Load the XBRL-based public company financial filing (any 10-K or 10-Q).*

Open the Pesseract application, select "Open", and then "Open XBRL instance from URL".
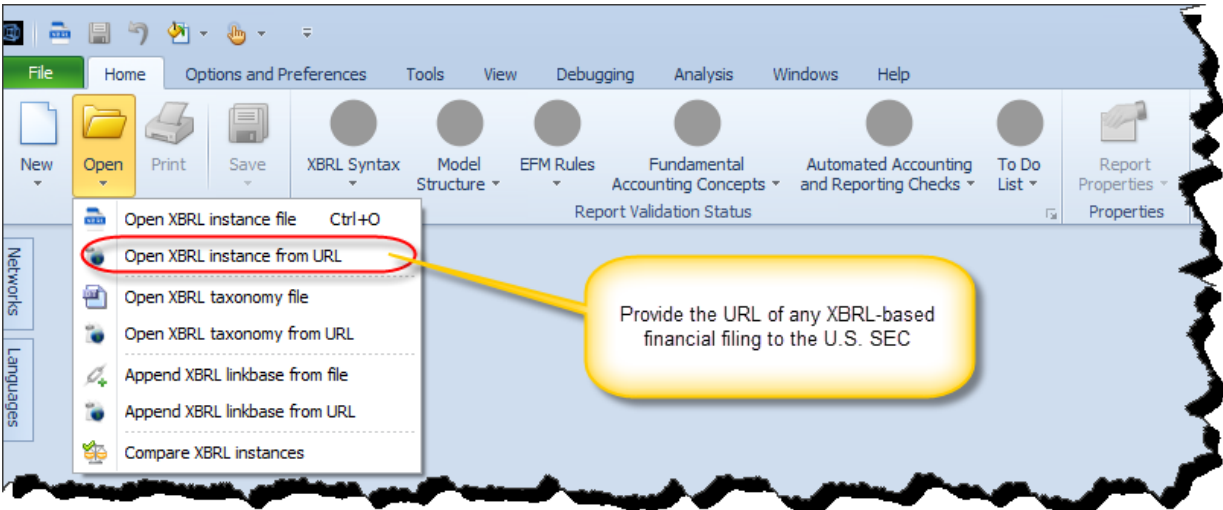
In the dialog box that appears, enter the URL of the XBRL-based public company financial filing which was submitted to the SEC. For this demonstration, we will be using this XBRL-based financial filing which was made to the U.S. SEC:

http://www.sec.gov/Archives/edgar/data/1337068/000117494716002678/mgyr-20160331.xml
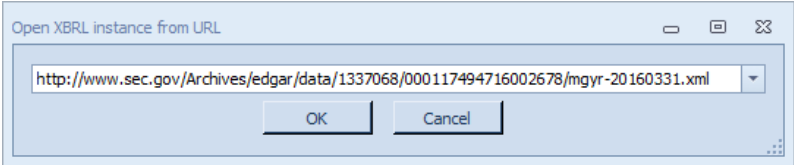
Press the OK button, then the XBRL-based document will be loaded into the application.

NOTE: *You can open a local version of an XBRL-based financial filing using the "Open XBRL instance file" option.*

STEP 2: *Run report model structure validation.*

Notice that the document has been loaded into the application. Notice the following things about the user interface:

1. The "**Report Profile**" has been detected to be an "XBRL-based public company financial reports in US GAAP to the SEC".
2. The "Report Validation Status" icons are all GRAY which indicates that no validation has been performed at this point.

Now, press the "Model Structure" icon from the Report Validation Status group, then select the "Run Validation" option.
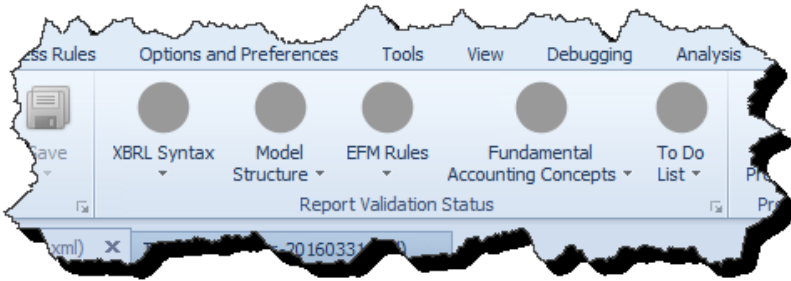
Notice that the "Model Structure Validation Results" form is shown which shows an analysis of the relations between the categories of report elements that make up the structure of the report as shown below:

Child	Parent						
	Network	Table	Axis	Member	LineItems	Abstract	Concept
Network	0	0	0	0	0	0	0
Table	0	0	0	0	0	0	0
Axis	0	29	0	0	0	0	0
Member	0	0	35	110	0	0	0
LineItems	0	56	0	0	0	0	0
Abstract	0	0	0	0	46	30	0
Concept	0	0	0	0	75	305	0

Further, the "Model Structure" Report Validation Status turns GREEN:
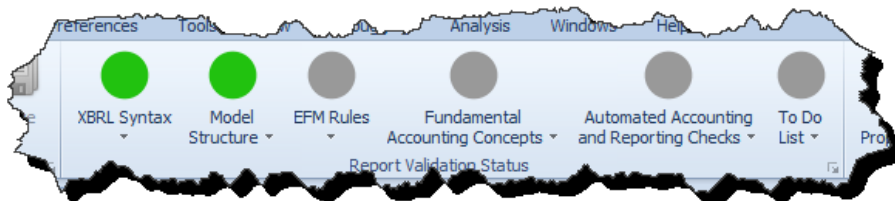
You can close the "Model Structure Validation Results" form.

STEP 3: *Run the fundamental accounting concept relations validation.*

Next, we will run the fundamental accounting concept validation (FAC). The first step in this process is to make sure the filing has the correct reporting style code assigned. For this specific filing, the reporting style code should have automatically been set to "INTBX-BSU-CF1-ISS-IEMIX-OILN". Press on the "Fundamental Accounting Concepts" icon to check this:
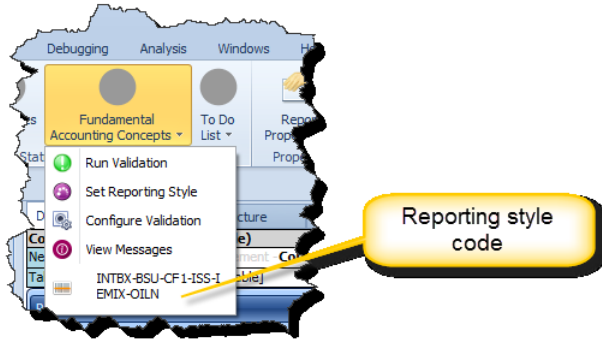
NOTE: *This code should be set. However, if it is not set; go to the "Set Reporting Style" menu item and select that style from the list and set the reporting style code to "INTBX-BSU-CF1-ISS-IEMIX-OILN".*

Then select the "Run validation" from the Fundamental Accounting Concepts icon to execute the validation. The following messages appear:


The messages indicate that all the fundamental accounting concept relations are valid which are indicated by the GREEN results but one is inconsistent with expectation. The inconsistent result is indicated by the ORANGE cell in the Result field.

Further, notice that the "Fundamental Accounting Concept" icon turned ORANGE to indicate that an inconsistency has been detected.
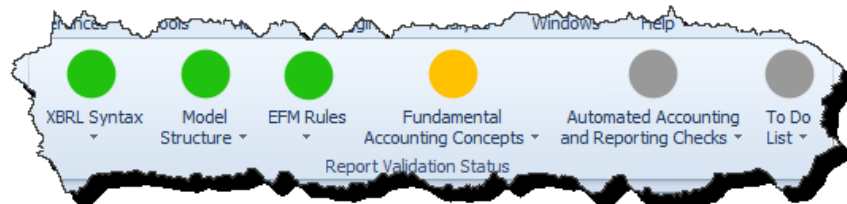
Notice that two THREE additional tabs were added to the application. One is the FAC Validation Result which you were looking at above, another is the FAC Taxonomy which explains all of the FAC validation rules, and the third is the FAC instance which provides the validation result.
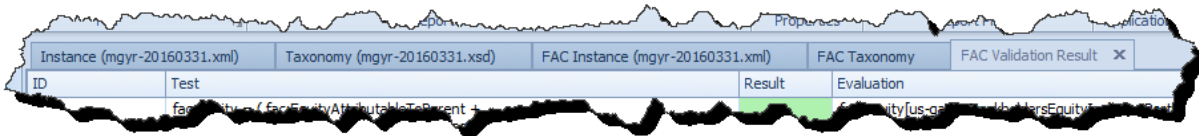
Select the "FAC Instance" tab. Notice the line Network/Table on the left that is ORANGE, indicating the location of the inconsistency:
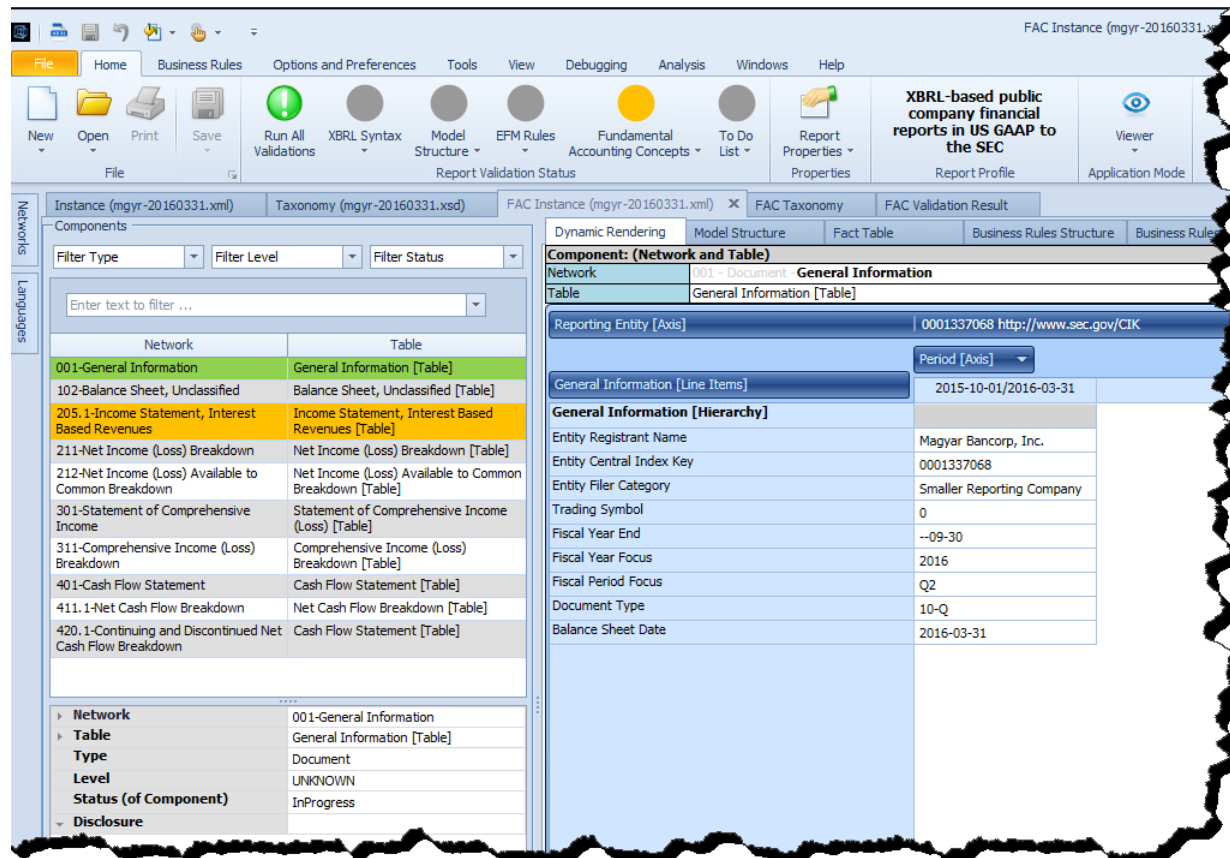
Click on the ORANGE Network/Table and that report fragment appears in the panel on the right (see the screen shot below). You can see that the fact for the line item "Interest Income (Expense) After Provision for Loan Losses" has an ORANGE highlighting, indicating that there is some sort of inconsistency. If you get out your calculator and compute the value, you notice that the report says the value is 7,743,000 but you will likely compute the value 7,744,000. There is a $1,000 difference between what was reported and the what the computation shows.

If you click on the reported fact for the line item "Provision for Loan, Lease, and Other Losses", a form will appear. Click on the "Provenance" tab and you will see that two facts were discovered in the XBRL-based financial report.

The fundamental accounting concept relations validation shows that the XBRL-based financial report contains conflicting information. Further investigation of reporting concepts will confirm this inconsistency.

STEP 4: *Determine if the inconsistency is an error.*

We want to find out where the concept "us-gaap:ProvisionForLoanLeaseAndOtherLosses" is being used. To do this, first, select "Instance" tab to work with that document. Next, select the "Tools" tab from the toolbar ribbon. Enter or copy/paste "ProvisionForLoanLeaseAndOtherLosses" into the "Search" tool. Press the "Search" button and the "Search Result" form appears on the right side of the screen. Click on the line item "Provision for loan losses" and you can see that this is the concept which is being picked up by the validation, that value is $468,000. If you not click on the "Statement of Operations" Network/Table, you can see that a different concept was used which has a value of $469,000 on the income statement representation.

This confirms that there is, in fact, a conflict/contradiction in the facts which have been reported.

Further, the roll forward of the provision for loan losses does not correctly foot and it uses the same concept which was reported on the income statement. You can find that disclosure by searching on the value "468000". Clear the search text box by clicking the red "X", the search results show up on the right of the application. The third fact is in the disclosure you are looking for:

NOTE: *You have to reconfigure the disclosure by dragging the "Class of Financing Receivable Type [Axis]" to the columns.*
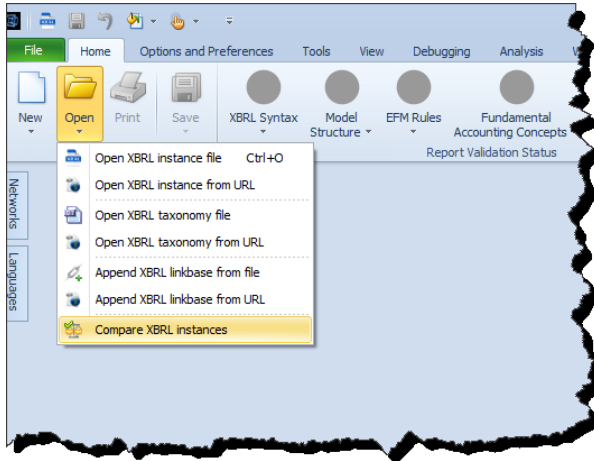
Because this information is contradictory, this inconsistency is confirmed to be an ERROR in the XBRL-based financial filing of this public company.

STEP 5: *Confirming the inconsistency by comparing information across periods.*

To further determine if an inconsistency is an error, one can compare the information reported within one XBRL-based financial report with other reports for the same economic entity and therefore see if the inconsistency is unique to one specific period or whether the same inconsistency **exists for other periods**. To do this you use the comparison functionality of the application.
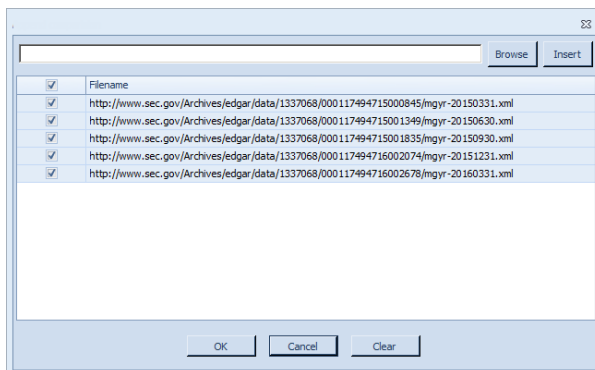
Select "Open" from the Home menu toolbar and then "Compare XBRL instances" from the menu:

In the comparison dialog you can enter as many XBRL instances as you might want to compare. Add the following XBRL instances using that comparison dialog:

- http://www.sec.gov/Archives/edgar/data/1337068/000117494716002678/mgyr-20160331.xml
- http://www.sec.gov/Archives/edgar/data/1337068/000117494716002074/mgyr-20151231.xml
- http://www.sec.gov/Archives/edgar/data/1337068/000117494715001835/mgyr-20150930.xml
- http://www.sec.gov/Archives/edgar/data/1337068/000117494715001349/mgyr-20150630.xml
- http://www.sec.gov/Archives/edgar/data/1337068/000117494715000845/mgyr-20150331.xml

After copying and pasting these XBRL instances the comparison dialog will look like the following screen shot below.

Press the OK button and the documents will load. Select the network "205.1-Income Statement, Interest Based Revenues" and you will see a five year comparison shown side-by-side which you can use to further investigate inconsistencies:

If you click on the line item "Provision for Loan, Lease, and Other Losses" for the periods that show no inconsistencies, you can see that the value for the two concepts reported always have the same value.

STEP 6: *Confirming the inconsistency by comparing information across entities.*

Similar to how you compared information across periods in STEP 5, you can also compare information across reporting entities. Again, to do this you use the comparison functionality of the application.

Select "Open" from the Home menu toolbar and then "Compare XBRL instances" from the menu:

In the comparison dialog you can enter as many XBRL instances as you might want to compare. Add the following XBRL instances using that comparison dialog:

- http://www.sec.gov/Archives/edgar/data/1337068/000117494716002678/mgyr-20160331.xml
- http://www.sec.gov/Archives/edgar/data/1576336/000110465916120688/ajsb-20160331.xml
- http://www.sec.gov/Archives/edgar/data/1390312/000110465916121296/bkj-20160331.xml
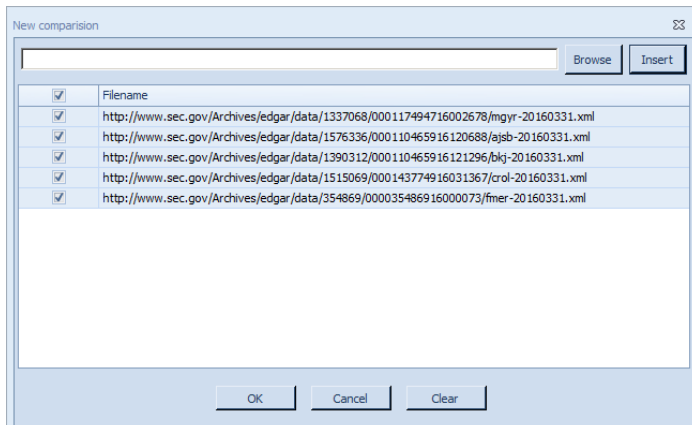- http://www.sec.gov/Archives/edgar/data/1515069/000143774916031367/crol-20160331.xml
- http://www.sec.gov/Archives/edgar/data/354869/000035486916000073/fmer-20160331.xml

After copying and pasting these XBRL instances the comparison dialog will look like the following screen shot below.

First, note that five different entities are loaded:

Second, notice that of the five economic entities, only one has an inconsistency:

By examining which concepts were used to report the line item by each economic entity you can determine what might be correct and what might be incorrect. In the five different screen shots below for each of the five economic entities; notice that only one economic entity, the one with the inconsistency, reports more than one of the three probable fact values or if they do report more than one then the fact values of the two different facts are the SAME value. This information itself is not an indication as to whether this is an error or not. It is just information. But when you dig deeper and see how the economic entities are using the second concept you can determine if the use of the two concepts is consistent with the rules of logic.

Fact Characteristics and Properties

Properties | Occurrences | Provenance

fac:ProvisionForLoanLeaseAndOtherLosses[us-gaap:ProvisionForLoanLeaseAndOtherLosses[7,809,000]]

Fact origin:

1	us-gaap:ProvisionForLoanLeaseAndOtherLosses	7,809,000
2	us-gaap:ProvisionForLoanAndLeaseLosses	7,809,000
3	us-gaap:ProvisionForLoanLossesExpensed	-

Fact Characteristics and Properties

Properties | Occurrences | Provenance

fac:ProvisionForLoanLeaseAndOtherLosses[us-gaap:ProvisionForLoanAndLeaseLosses[300,000]]

Fact origin:

1	us-gaap:ProvisionForLoanLeaseAndOtherLosses	-
2	us-gaap:ProvisionForLoanAndLeaseLosses	300,000
3	us-gaap:ProvisionForLoanLossesExpensed	-

Fact Characteristics and Properties

Properties | Occurrences | Provenance

fac:ProvisionForLoanLeaseAndOtherLosses[us-gaap:ProvisionForLoanAndLeaseLosses[30,166]]

Fact origin:

1	us-gaap:ProvisionForLoanLeaseAndOtherLosses	-
2	us-gaap:ProvisionForLoanAndLeaseLosses	30,166
3	us-gaap:ProvisionForLoanLossesExpensed	-

Fact Characteristics and Properties

Properties | Occurrences | Provenance

fac:ProvisionForLoanLeaseAndOtherLosses[us-gaap:ProvisionForLoanAndLeaseLosses[(60,000)]]

Fact origin:

1	us-gaap:ProvisionForLoanLeaseAndOtherLosses	-
2	us-gaap:ProvisionForLoanAndLeaseLosses	(60,000)
3	us-gaap:ProvisionForLoanLossesExpensed	-

Fact Characteristics and Properties

Properties | Occurrences | Provenance

fac:ProvisionForLoanLeaseAndOtherLosses[us-gaap:ProvisionForLoanLeaseAndOtherLosses[468,000]]

Fact origin:

1	us-gaap:ProvisionForLoanLeaseAndOtherLosses	468,000
2	us-gaap:ProvisionForLoanAndLeaseLosses	469,000
3	us-gaap:ProvisionForLoanLossesExpensed	-