Introduction of credit loss automation reporting tool

Note: Due to the credential agreements Purdue University student team had signed with their business partner, the actual automation reporting tool, the imported data, and the Excel VBA code will not be shared in the Github. However, the following text description and screenshot provide an general introduction of the functionality of the tool.

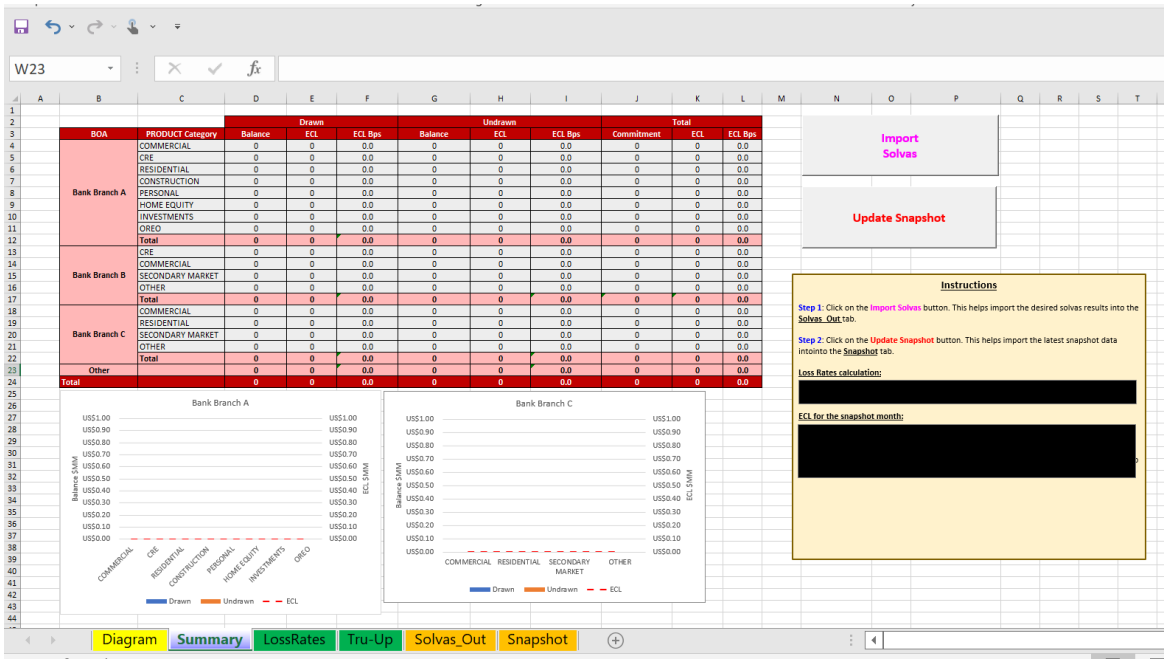
1. Overall tool design logic:

Enable the end users to import 2 files, “solvas out” and “snapshot” data to Excel. The tool will first automatically calculate the credit loss rate of individual loans, based on historical accounting data (“solvas out”). Consequently, the loans will be grouped into several segments, based on the accounting standard and the bank management’s professional judgement. Lastly, the credit loss rate calculated for different portfolio segments will be applied to the historical data(“snapshot”) again to calculate and predict the credit loss of each segment in the next period.

2. Tools screenshot:

a. Excel template

There are two buttons written with ***Excel VBA*** included in the tool. The reporters will be able to easily import the “solvas out” and “snapshot” data into the tools. After that, the calculated ECL (estimated credit loss) and the corresponding charts will be automatically calculated and summarized in this sheet.



b. Python template:

Due to the large dataset, the risk management team also write a ***python*** version of the tool to speed up the running time of the tool. Similarly, the python version of automation tool will import data from the users' designated file path, calculate the credit loss of next period, and generate the corresponding charts with the same logic.

Python output (1)- Calculated credit loss:

BOA	Product_Cat	Drawn_ECL	Undrawn_ECL	Total_ECL
Bank Branch A	COMMERCIAL	[redacted]		
	CONSTRUCTION			
	CRE			
	HOME EQUITY			
	INVESTMENTS			
	OREO			
	PERSONAL			
	RESIDENTIAL			
Bank Branch B	COMMERCIAL			
	CRE			
	OTHER			
	SECONDARY MARKET			
Bank Branch C	COMMERCIAL			
	OTHER			
	RESIDENTIAL			
	SECONDARY MARKET			

Python output (2)- Calculated credit loss: