

Visualization on Asset and Liability Cash Flow

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BACKGROUND

Hungarian Central Bank (short for MNB in the following report) introduced several financial indicators on liquidity management, since 2012, a new liquidity measurement model called FFAR¹ (FX funding adequacy ratio) met with commercial banks, to simultaneously reduce maturity mismatch in both on and off balance sheet FX position, my customer as a commercial bank from other countries was significantly affected by this new indicator.

Guidelines in 2012 was (stable FX Funding + Long term net FX swaps) / FX assets to be funded should be above 65%².

During 8 years, FFAR requirement has been increased from 65% to 100%, internal warning level had been increased from 102% to 105%, the weighted for asset and liability has been updated several time, especially at the beginning of 2020, with the effect of pandemic, MNB adjusted some weighted on liability and asset based on remaining period, the largest change on liability weighted as following:

Before updated:

10M liability (such as deposits from corporate) which remaining days are above 1Y counts weight as 100%

After updated:

10M liability which remaining days are above 5Y counts weight as 100%

10M liability which remaining days are between 2Y to 5Y counts weight as 90%

10M liability which remaining days are between 1Y to 2Y counts weight as 70%

To reach this goal, not only financial department and treasury department should know structure of asset and liability structure, but also the business department

¹ <https://www.mnb.hu/en/pressroom/press-releases/press-releases-2018/mnb-brings-its-regulation-on-stable-fx-financing-closer-to-international-standards>

² <https://www.mnb.hu/letoltes/new-liquidity-measures-kj-20121129.pdf>

should have a basic understanding on what did our asset and liability changed in the past and how are they going to be managed in the future period by period.

After reaching above mentioned goals, treasury and financial department should be responsible for adjusting business structure based on existing deals and business department should be better on arranging the new deals to minimize the liquidity risk and maximize the net interest income.

METHODOLOGY AND FINDINGS

Data collecting and Data cleaning:

In this project I did data cleaning, labelling and data collecting in the database by SQL and export them to excel file due to GDPR, customer name, account and other related details were cleaned out, in the production environment, they will be added in the side menu to be selected.

Original data mart and data warehouse included all entities , most of them are using same systems, therefore, the data cleaning ,collecting, abnormal deals trace back could be maintained in data ware house by financial department to make sure the source for dashboard are correct to use.

Even without financial knowledge or accounting knowledge, business department could understand the business structure by using dashboard.

Dashboard:

The dashboard mainly showed in 4 parts:

1.The glance on asset and liability:

So far, there are only date, period ,currency account, original amount and amount in local currency columns are available, by discussing with business department, other

columns will be added with same logic in production environment.

By using this page, it will be easier to located where the specific deal is, how it looks like, where the customer distributed , furthermore, it may help customer managers understand how to maintain the customers. For example: by using this table customer manager found customer A which is deposit customer may support the customer B which is loan customer for one month, after calculating FFAR and other liquidity result, it will not be below to internal warning level, then one month costs were saved.

2. Plot shows that how the categories distributed in each period in XHU(which means all currency converted in local currency), there are 2 plots : first one will list all period by categories and second shows details in each period, variables are available to choose.

3.After the glances, the details check will be necessary, therefore, third plot shows same structure as second part, instead of category such as liability, more details shows in original currency will be listed, such as deposits.

4. Feedback from users, feedback is making the program better.

SUMMARY

According to this capstone project, users will be able to understand business model faster and remember business structure longer than only read figures through balance sheet and general reports, the quicker respond to nonpredictable market is worthwhile looking forward to the future.