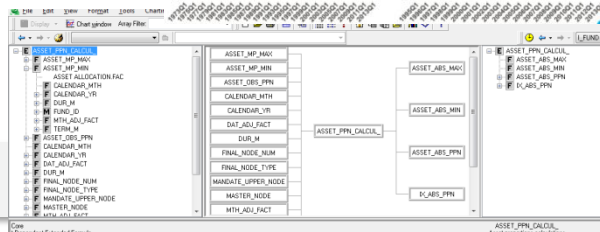
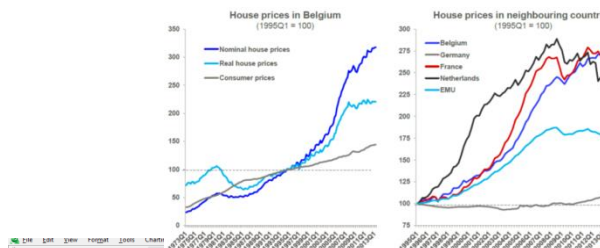
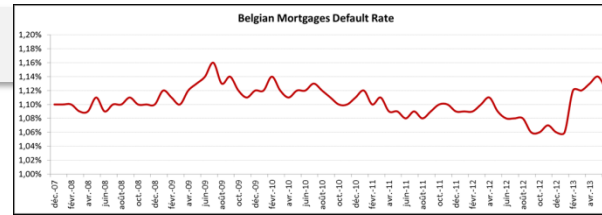


PROPHET MORTGAGES MODEL Improvement

All dummy numbers & graphs for illustrative purposes only

Client Situation

- Belgian insurance company
- Internal needs to perform multiple enhancements for mortgages portfolio into PROPHET Professional (model 1)
- Integration for mortgages model into Prophet ALS (model 2)



```

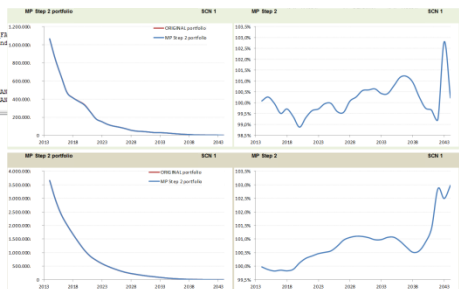
Code
Dependent Extended Formula
Private no_node, no_node_bis, no_asset, 1, 3 as Number
Private node_bis(no_node), node_bis(no_node) as Number
Private node_bis(no_node), node_bis(no_node) as Number
Private node_bis(no_node), node_bis(no_node) as Number
Private node_bis(no_node), node_bis(no_node) as Number
Public level as Number
Public level as Number

IF node_bis(no_node) = 1
node_bis(no_node) = 1
node_bis(no_node) = 1
ENDIF

IF node_bis(no_node) = 1 TO ARRAY_SIZE("ITEM_NODE")
IF node_bis(no_node) AND node_bis(no_node) AND CALENDAR_MTH(ITEM_NODE) <= MTH_ADU_FACT
node_bis(no_node) = 0
node_bis(no_node) = 0
node_bis(no_node) = 0
ENDIF
ENDIF

IF node_bis(no_node) = 1 TO ARRAY_SIZE("ITEM_ASSET")
IF node_bis(no_node) AND node_bis(no_node) = 1 THEN
node_bis(no_node) = 1
node_bis(no_node) = 1
node_bis(no_node) = 1
ENDIF
ENDIF

ELSE
ENDIF
    
```



Issues

- Perform all required improvements satisfying validation recommendation
- Models should be auditable
- Models should be operational (including key-point of runtime)
- Model2 should be compliant with existing Prophet ALS guidelines
- Improvements should be documented

Reacfin Contribution

- Propose collaboration for mortgages models improvement into Prophet (including ALS library)
- Performing required improvements topics
- Propose a second-look over existing mortgages model
- Models testing & operationalization
- Extra milestones
 - Different suggestions to simplify ALS complexity
 - Extra runtime reduction
 - Benchmarking with market standards

Results & Benefits

- Fulfilled internal validation requirements
- Improved model quality, runtime & comprehension