Global Custody in Financial Markets
European Study Group with Industry ESGI102

Customer

Custody is a service in which a brokerage or other financial institution holds securities on behalf of the client. This reduces the risk of the client losing his/her assets or having them stolen. They are also available to the brokerage to sell at the client's demand. Like a bank, custody provides an investor a place to store assets with little risk. Unlike a bank, custodians are not allowed to use the items in safekeeping for their own ends. Assets in custody are not fungible for the brokerage because they remain on the client's name. For this reason, these institutions normally charge custodial fees for safekeeping services. A global custodian is a financial institution that provides customers with custody services for securities traded and settled in financial markets throughout the world.

Problem Definition & Challenge

When a client of the custodian bank engages in a transaction such as a trade, the custodian must engage in a reconciliation of the transaction in their accounts. The failure rates for trades and reconciliations is very small, of the order of substantially less than 1% of all transactions on a daily basis. However, as the bank is engaged in high numbers of reconciliations, these failed transactions pose a number of problems:

- Client behaviour leads to failure to meet SLA requirements having adverse impact on revenue.
- Compliance risks for clients with "depositary" responsibility.
- Operational costs increase due to manually intensive reconciliation cleansing.

The most common causes, amongst many others, for failed trade reconciliations are:

- Incomplete trade instructions.
- Impact of client specified trade counterparties.
- Location of trading (and subsequent system).
- Impact of securities types.

The key problem, which we challenge workshop members to answer, is to identify the transactions that are likely to fail, in advance of their failing, and to allocate these transactions to different risk consequence groupings, as defined by their value, probability of failure and regulatory impact.

We suggest the following problem solution format:

<u>Section I</u> Analyse Failed Settlements

We look at the 54x messages that have failed over the last 90 day period. We look at what the dominant reasons are for the failures, which include the following:

1. Settlement Date
2. Trade Date
3. ISIN
4. Designation
5. Nominal amount
6. Securities account
7. Counterparty
8. Sender's Client (optional)

9. Place of Settlement
10. Currency of Denomination
11. Delivering Agent
12. Deliverer's Custodian
13. Place of Settlement
14. Cash Amount
15. Buyer
16. Seller

Of interest is the frequency of each variable to failed settlements and the frequency of multiple variables, correlated to each other, on failures.

Section II Analysis of Failed (Repaired) Settlements

We then look at the frequency of each variable to repaired settlements. We will also look at the frequency of multiple variables, correlated to each other, on failures.

Section III Calculate Settlement Variable (SFV) Rules

The **Settlement Failure Variables** are the key attributes that contribute most to either settlement message repair, or settlement failure. The rules will identify probability of failures based on:

- A single instance of a very high risk of failure message attribute:
- An agent that has failed every time at the bank
- A combination of attributes, where the aggregate probability of failure is very high;

E.g. the combination of a variable such as security type, place of execution, agent (where a combination of execution location & type, and security type) have a large impact on failures.

Failure Rate Probability P(f) –

1. Query table looking for total settlement instructions, versus total failed (including repaired) settlement instructions for the last 90 days (rolling).

2. Query table looking for total settlement instructions versus failed settlements where last update minus feed update is greater than one day. Get total transactions and total fails for those transactions. Each query is grouped by date.

3. 90 day rolling average for both quantity and value from settlement failures can be superimposed.

4. The probability of a failure for each settlement failure item is predicted by analyzing the previous 90 Days.

5. This is repeated for a combination of dominant variables.

Section IV Risk Test

Based on the probability of risk from a combination of dominant variables, we filter the transactions with a greater than x% chance of failure. If less than x% probability, the message proceeds to settlement queue. If it is greater than this, it goes to the Risk Consequence Filter.

Section V **High Operational Risk – High Compliance Risk Filter:**

We then further filter the messages that have a high probability of failure that show the following characteristics: High Risk Consequences – High Operational Risk or High Compliance Risk and Medium Risk Consequences – Medium Operational Risk or Compliance Risk.

Section VI **High Consequence Queue:**

The potential failures with: very high probabilities (tbd) of failure AND High Value (tbd) transactions OR High (tbd) impact regulatory consequences will be placed in a High Consequence Queue.

Section VII **Medium Consequence Queue**

Potential failed trades with: a medium (tbd) level probability of failure AND a medium (tbd) transaction value OR a medium (tbd) impact regulatory consequences will be placed in a Medium Consequence Queue.

The Solution Flowchart

The operation of the below diagram is described at a high level in Sections I – VII.