Operational Loss Project

Continuous Auditing & Reporting Lab
Rutgers Business School

Background

- From 2004 Operational Riskdata eXchange Association (ORX) began to operate Global Operational Risk Database.

- Basel II defined event types of operational loss. Banks should follow standard format to collect data and report to ORX annually.

- Basel committee on bank supervision provides a highly aggregated report of operational loss. It provides discussion over losses in different regions, different business lines, etc……

Data

- 11089328 observations

- 32 variables in total.

- Useful variables: loss value, occurrence date, detection date, loss types, line of business (both level 1 and level 2), company, area, accounting location, block, base groups.

- Data contains loss collected between 2009 and 2012.

What we have done

- Understand entries in the dataset
  - ➢ The largest 20 losses constitute 5% of total losses
  - ➢ Loss amount (2.5 million losses have the same amount)

- Compare different types of losses and link them to external information

- Examine time series changes

- Study relationship between detection efficiency and loss amount

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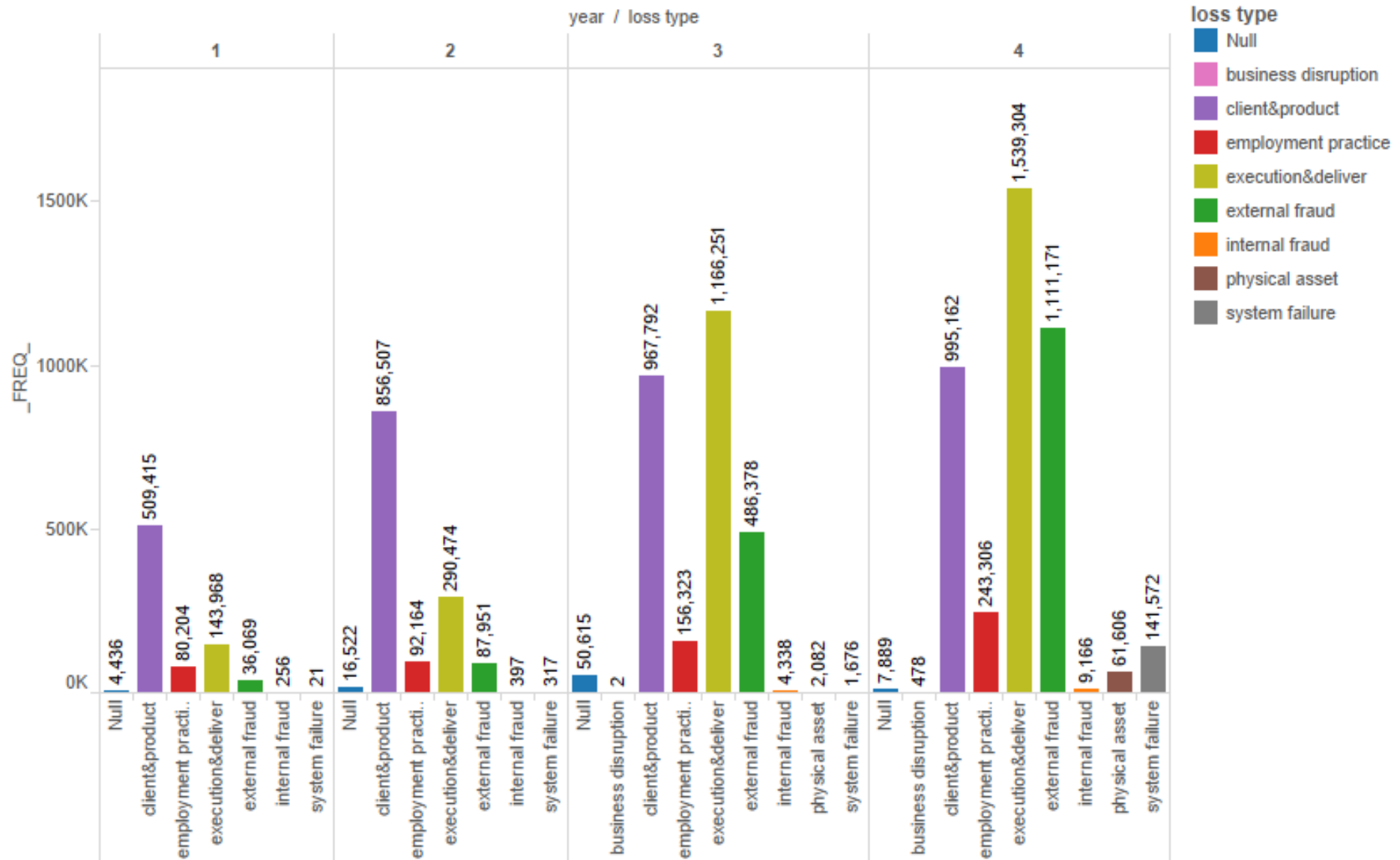
value and gap by type
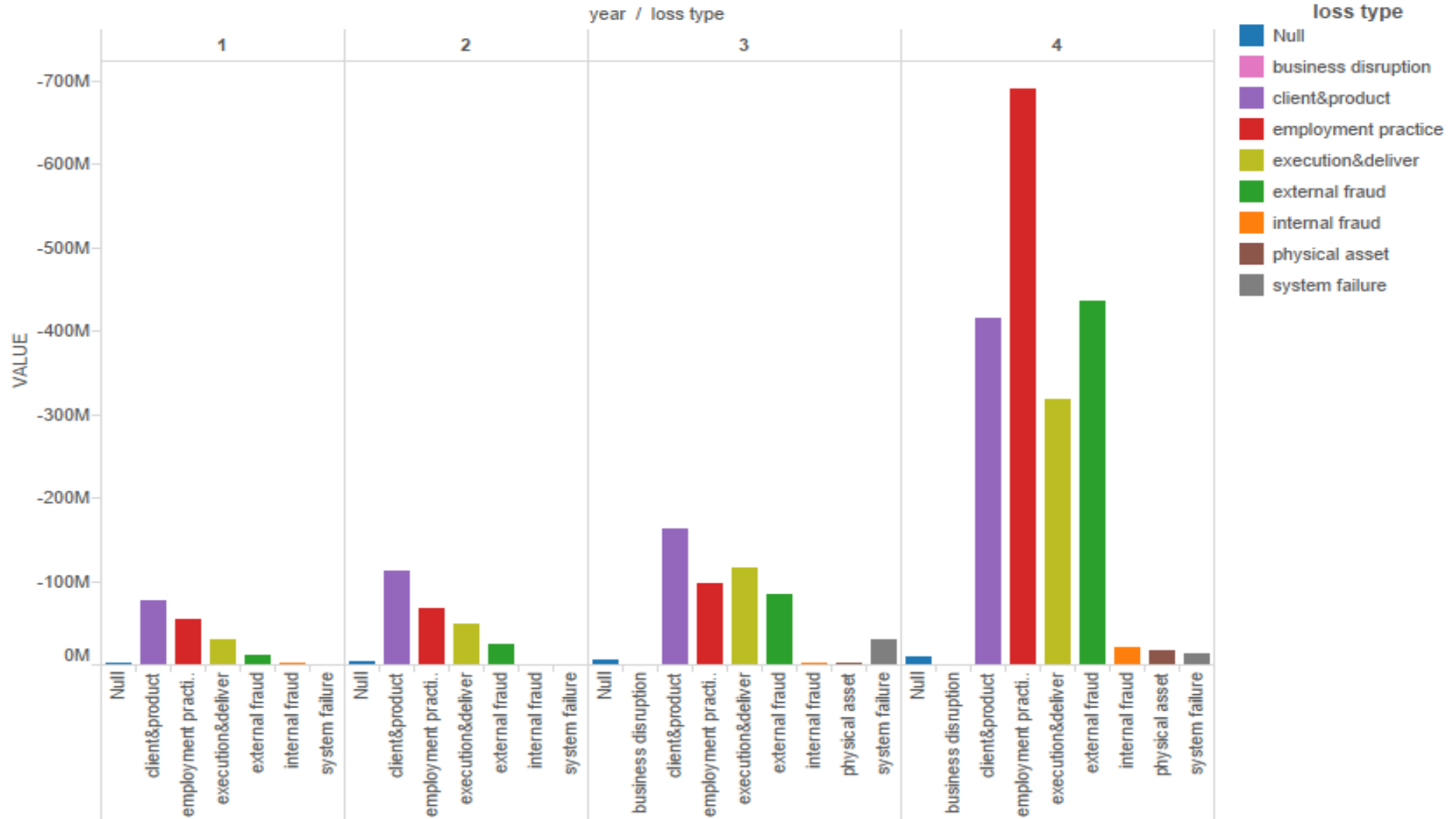
Sum of Valor da perda financeira / provisão / recuperação for each loss type broken down by year. Color shows details about loss type. The view is filtered on loss type, which keeps 9 of 9 members.

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gap by type
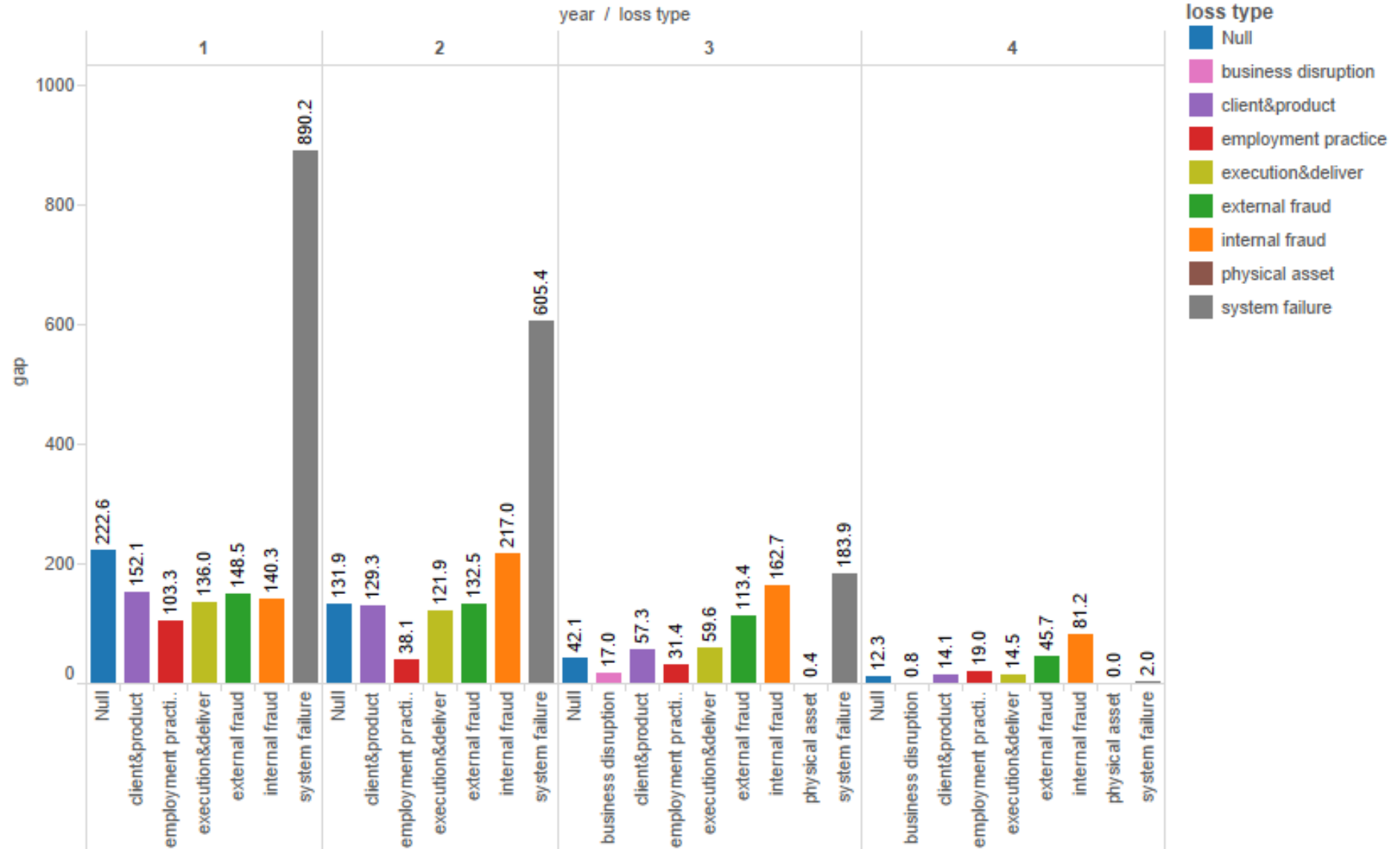
Sum of gap for each loss type broken down by year. Color shows details about loss type. The marks are labeled by sum of gap. The view is filtered on loss type, which keeps multiple members.

freq by type

Sum of _FREQ_ for each loss type broken down by year. Color shows details about loss type. The marks are labeled by sum of _FREQ_. The view is filtered on loss type, which keeps 9 of 9 members.

Interesting question

Is loss amount of fraud associated with detection gap (detection time – occurrence time)?

Conflicting intuition:

The larger the loss amount of fraud, the more difficult it would be to detect it because it is well-planned.

VS

The larger the loss amount of fraud, the faster the bank will be aware of that loss because of materiality.

Approach

- Form year-month panel data.

- For each year-month data, form 10 portfolios based on loss value.

- Take average detection gap for each year-month data. Avg_gap

- Take average detection gap for each year-month-rank data. Gap

- Normalize gap by Avg_gap: Nor_gap=gap/avg_gap

- P
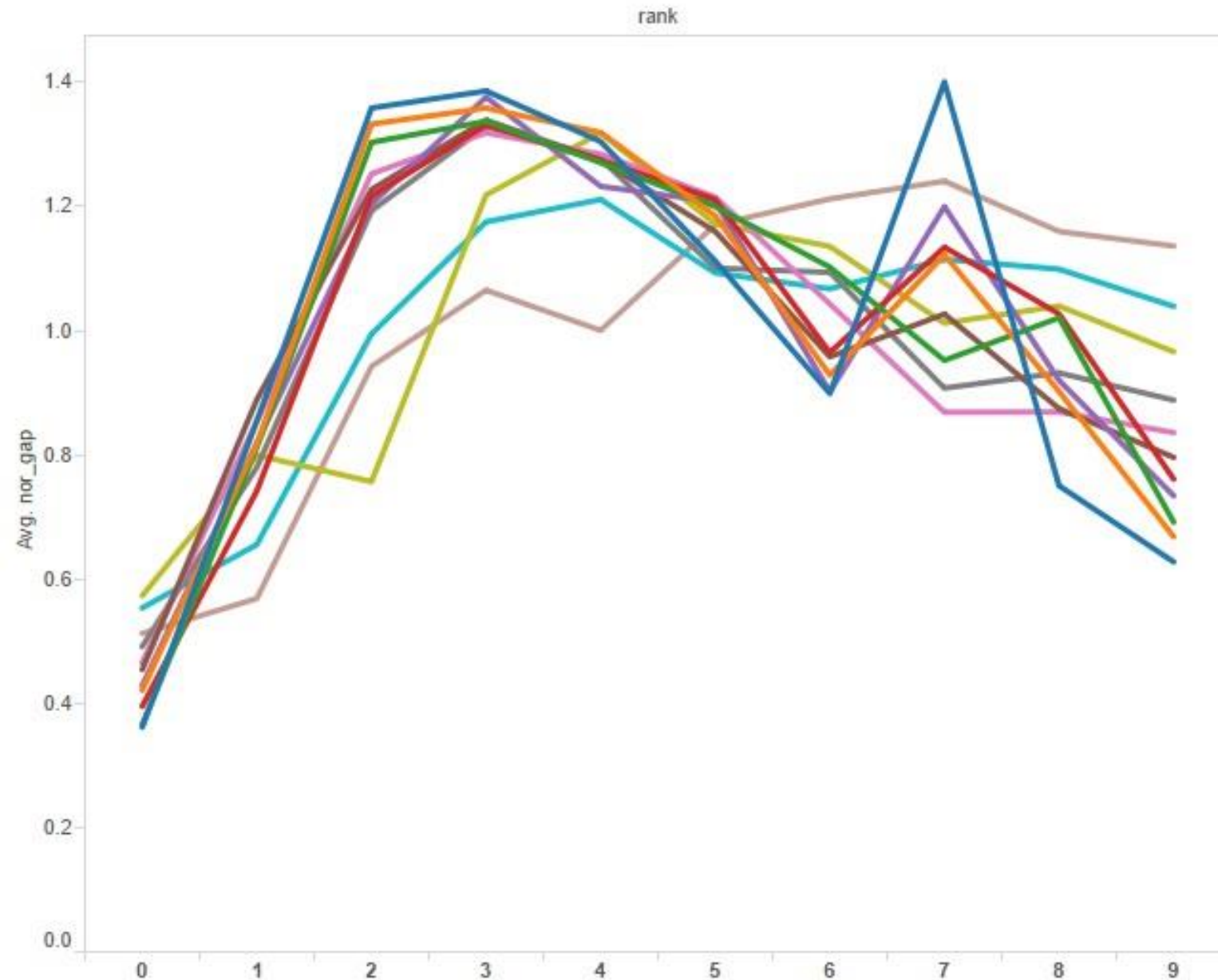
Y:
normalized average detection gap for each year-month-rank group.

X:
Rank numbers (0 means largest loss, 9 means smallest loss)

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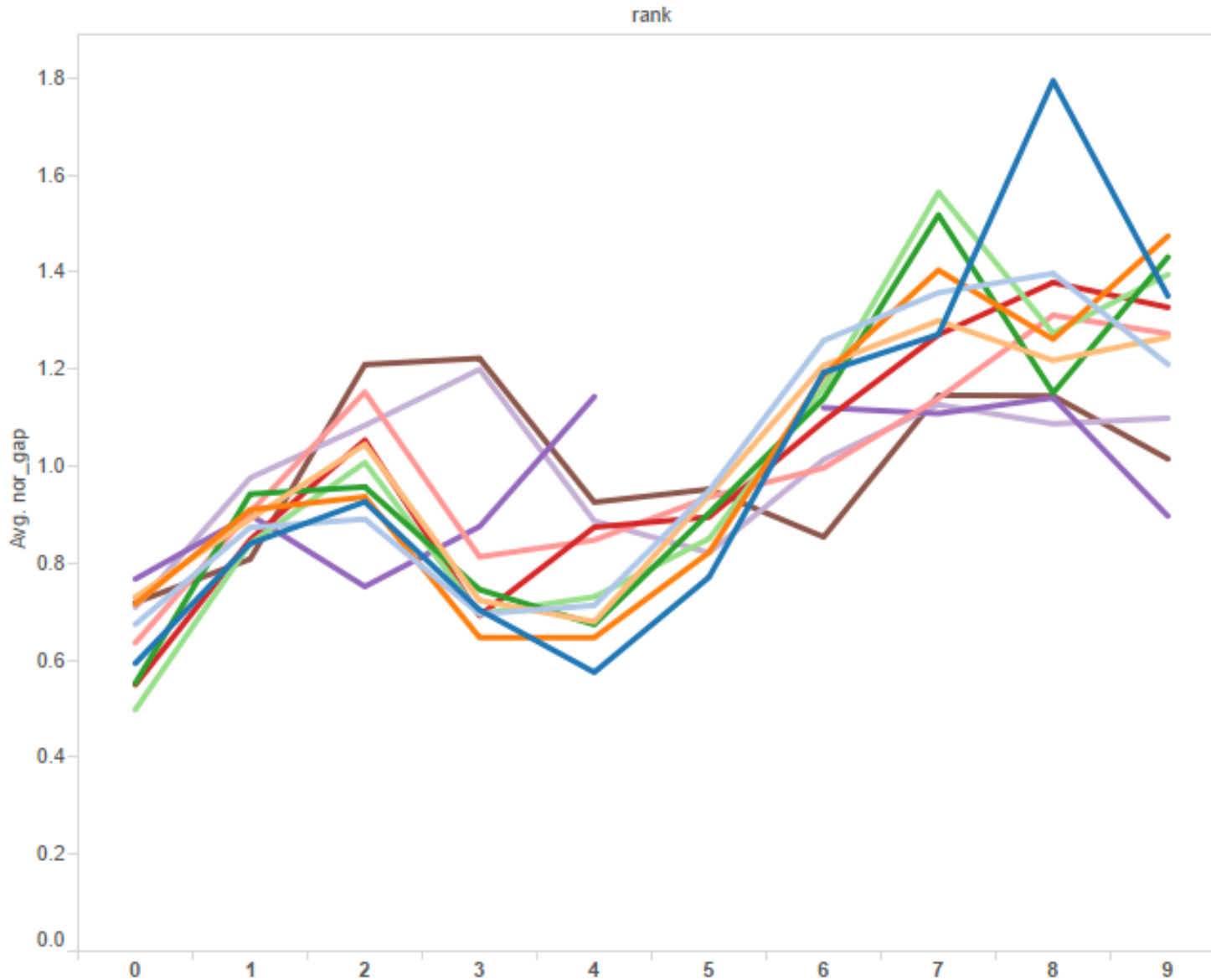
Y:
normalized average detection gap for each year-month-rank group. (only keep losses larger than 500)

X:
Rank numbers (0 means largest loss, 9 means smallest loss)

Future objective

- Merge this dataset with other datasets that contain information about attributes of different companies, business lines, etc……

- Predicting future losses by incorporating macro economic change and external information.

- Examine which branch is lagging at detect losses

- Identify potential patterns among different types of losses.

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