Anti-Money Laundering Transaction Monitoring Dashboard

A Power BI Solution to Detect, Investigate, and Visualize Suspicious Financial Activity

Objective

To monitor and analyze financial transactions to detect potential money laundering. This includes identifying unusual transaction patterns, high-risk entities, and peak periods of suspicious activity across customers, merchants, and banks.

Summary

This project uses IBM's **synthetic AML dataset** (CSV-based) to simulate real-world financial transaction scenarios. Built using a **Star Schema model**, the dashboard integrates:

- Dynamic KPIs: Total suspicious activity, flagged entities, and risk distribution
- Drill through Pages: Detailed breakdowns for merchants, and banks
- Time-Based Trends: Patterns over time to surface anomalous behavior
- Advanced Features: Tooltips, and interactive navigation buttons

Built using Power BI Desktop, CSV datasets, DAX, and a Star Schema Model.

The pages of this report are as follows for navigation:				
Executive Overview	Merchant Risk Profile	Time-Based Suspicious Activity Analysis	Customer Risk Profile	Laundering Risk Summary & What-If Analysis

Created by Ashika S S · July 2025



Time-Based Suspicious...

Customer Risk Profile Laundering Risk Summary &...

Executive Overview



Key insights on suspicious volume and laundering patterns.

Total Transactions

Total Transactions

39 M

Total Suspicious Txns

Total Suspicious Txns

7 M

Avg Suspicious Amount

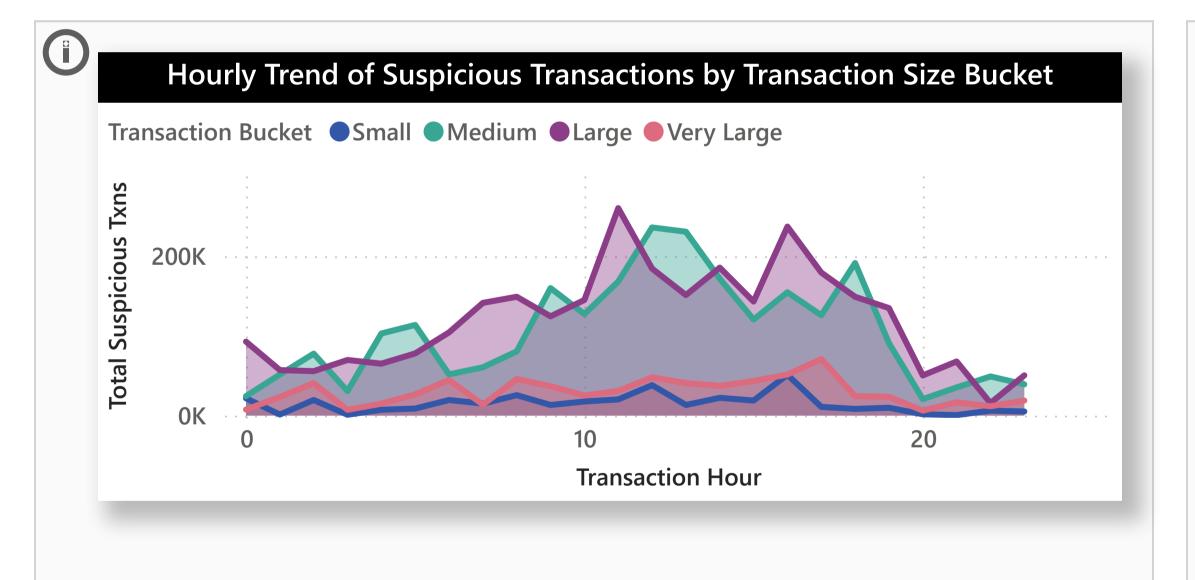
Avg Suspicious Amount

1.70M

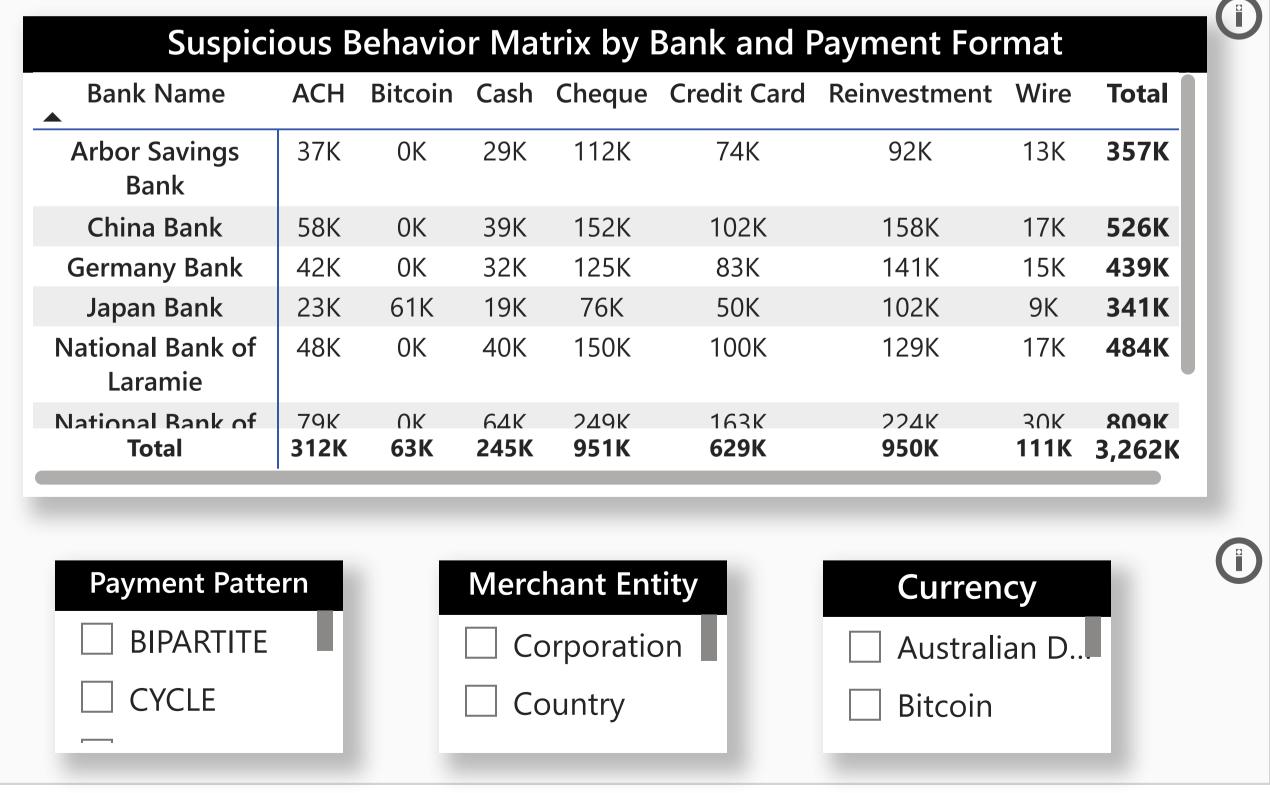
5 % of Funds Laundered

Laundered Amount %

8.8%



This page highlights overall AML trends using KPIs such as total suspicious transactions, average suspicious amount, and funds laundered %. It provides an hourly view of suspicious activity by transaction size and compares behavioral patterns across banks and



Time-Based Suspicious...

Customer Risk Profile Laundering Risk Summar..

Merchant Risk Profile

?

Identifying High-Risk Merchants Based on Suspicious Transaction Patterns

Total Merchants

Total Merchants

357K

Avg_Laundering_Rate_P...

Avg_Laundering_Rate_P...

72.3%

High-Risk Merchants

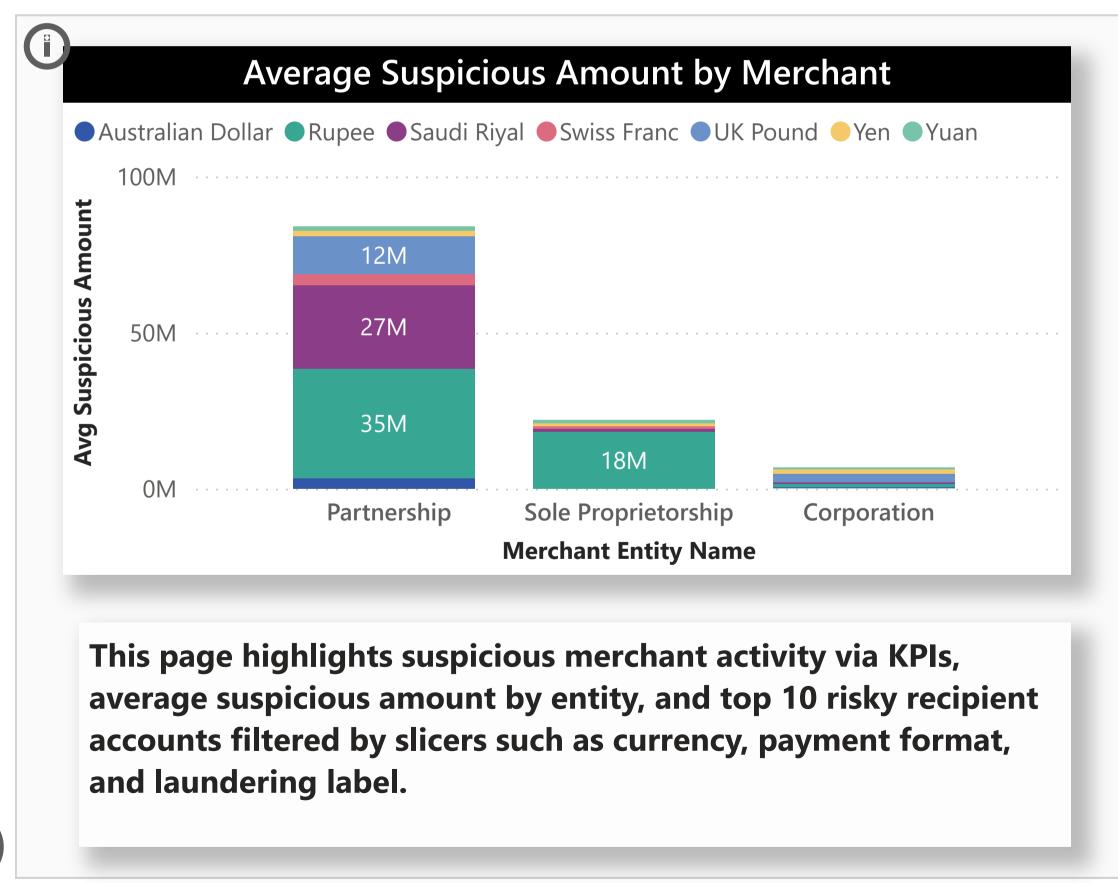
High Risk Merchants

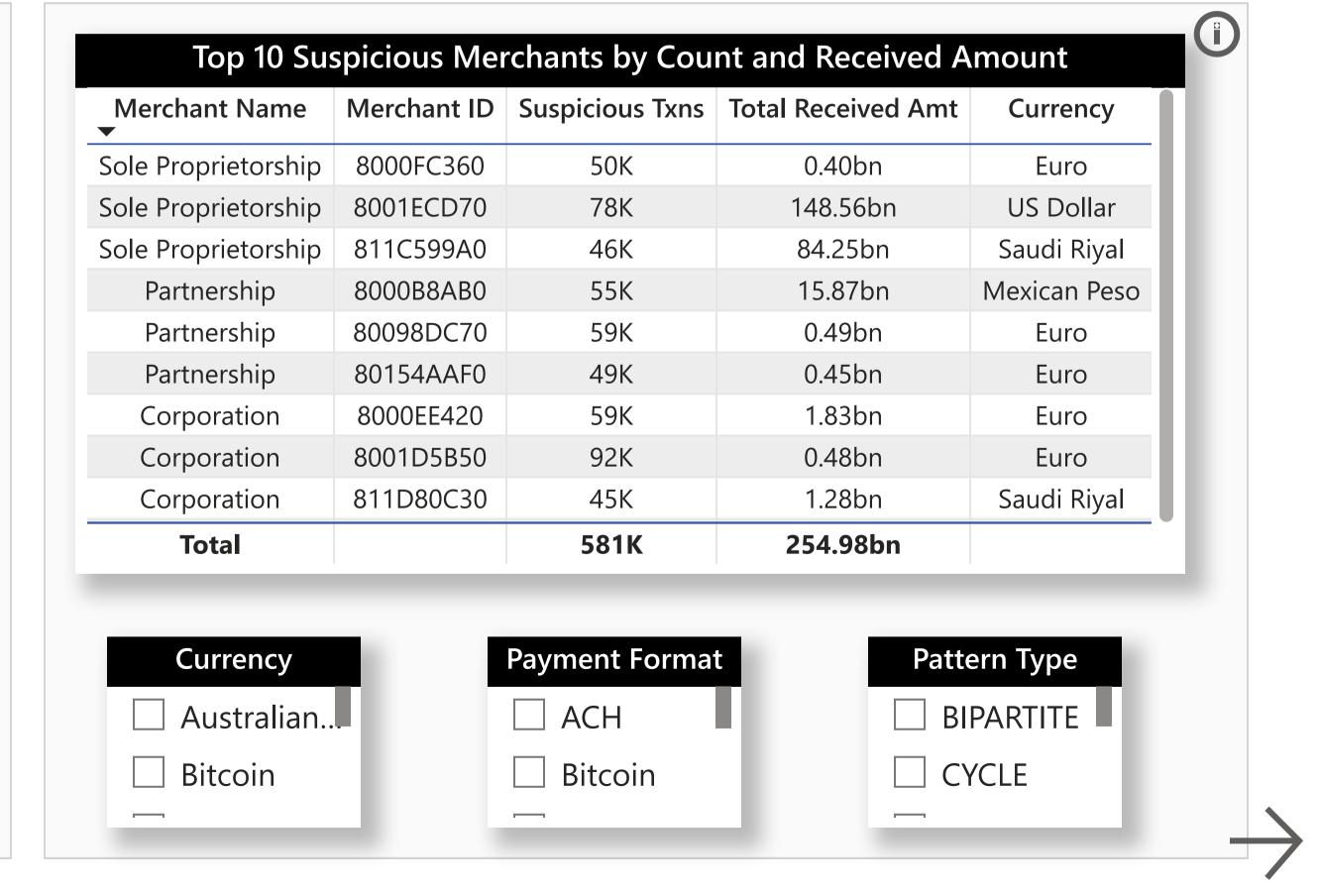
2.6 K

Laundering % By Merchant

Laundering % by Merchant

16.7%







Merchant Risk Profile Customer Risk Profile

Risk Laundering Risk Summa...

Time-Based Suspicious Activity Analysis

Trends in suspicious transactions across time and peak periods

Weekend % of Laundering

Pct_Weekend_Laundering...

Transactions

31.5%

Laundering Txn Change (Week-over-Week)

Week-over-Week...

7M

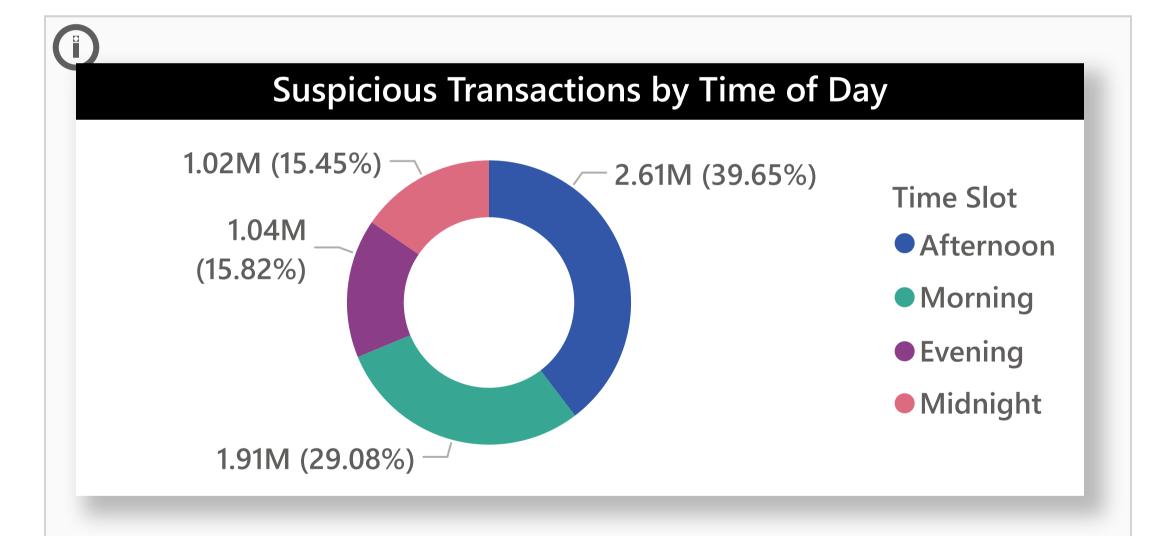
Peak Suspicious Hour

Peak Suspicious Hour

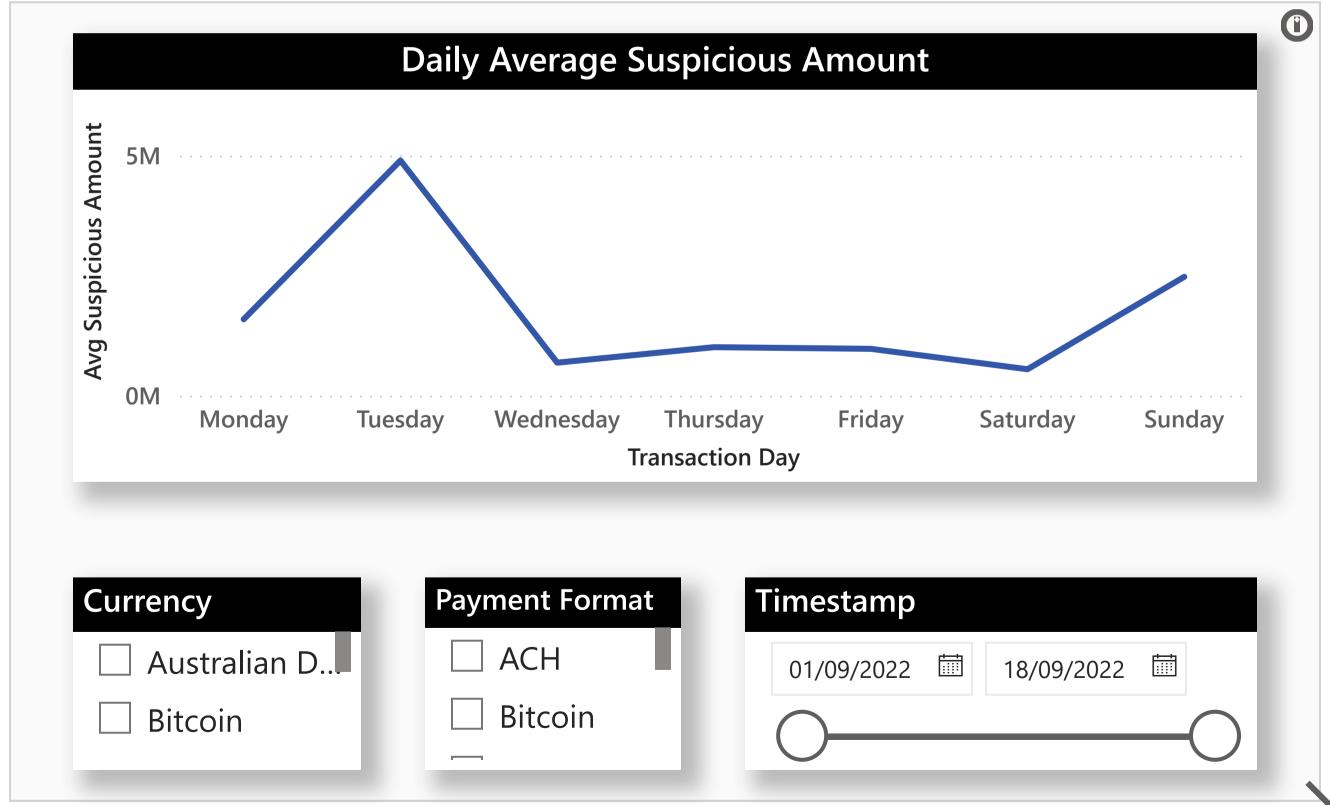
1 2

Daily Avg Suspicious

2.19M



This page highlights time-based patterns in suspicious transactions using KPIs, a donut chart of laundering counts by time slot, and a line chart showing daily transaction trends. Slicers allow filtering by currency, payment format, and date.





Merchant Risk Profile

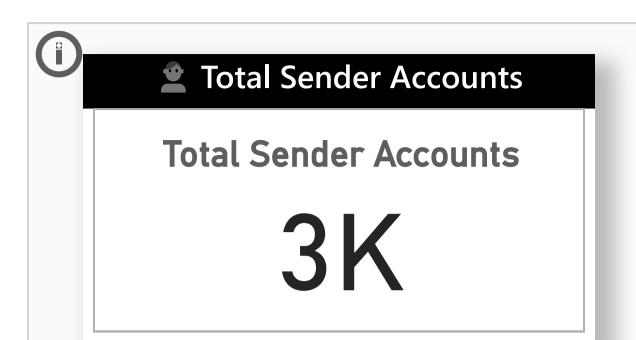
Time-Based Suspicious...

Laundering
Risk Summa...

Customer Risk Profile

?

Risky customer behavior based on transaction and laundering patterns.



High-Risk Senders

HighRisk Senders

2 K

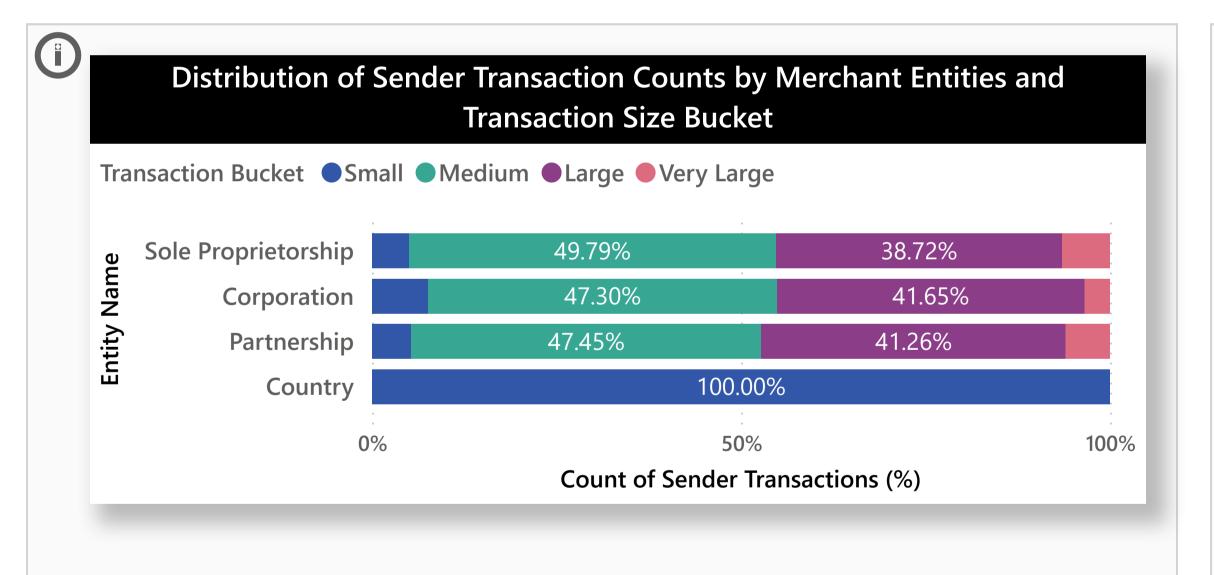
Avg Suspicious Amt per Sender

4.11bn

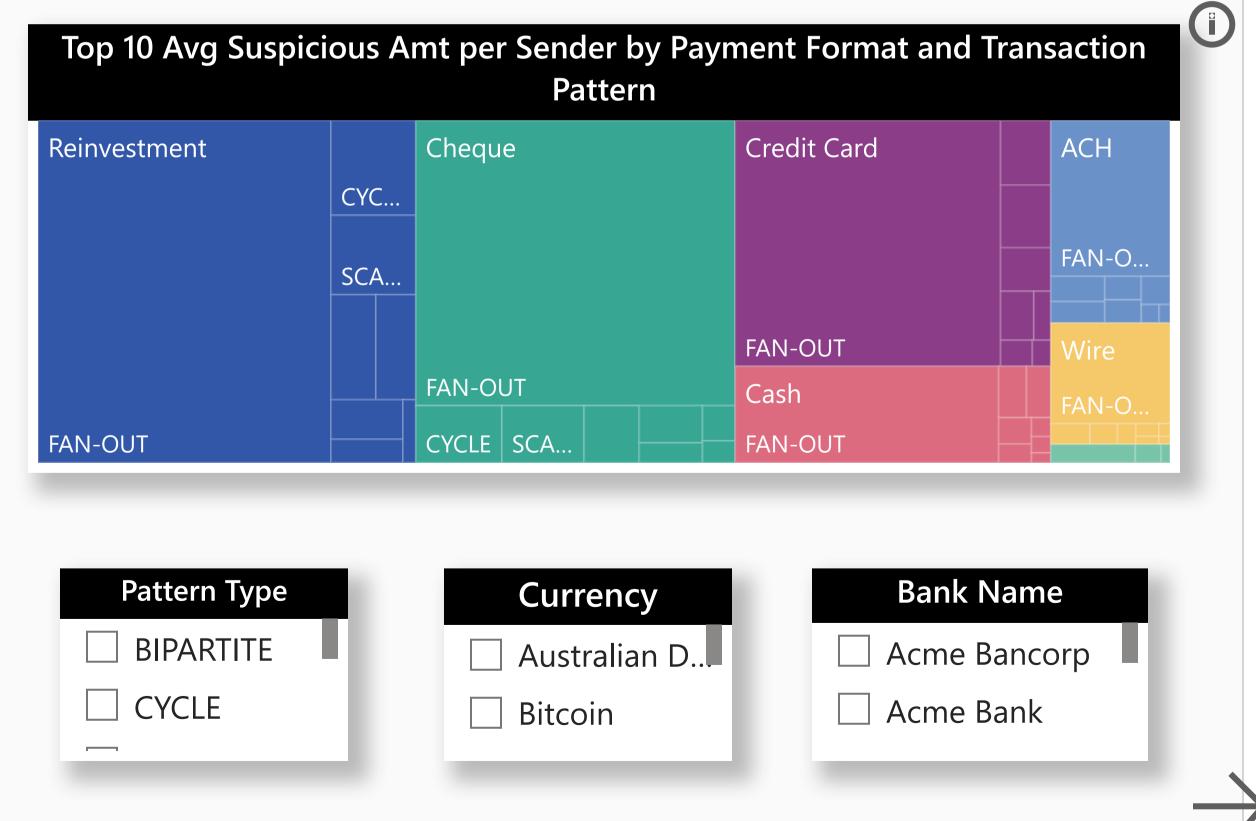
Laundered Transaction Amt (%)

Laundered Amount %

8.896



This page highlights laundering patterns across sender profiles using KPIs, a stacked bar chart of transaction counts and amounts by merchant entities and transaction size bucket, and a tree map of average suspicious amount per sender by payment format and pattern type. Slicers allow filtering by bank name, transaction bucket, pattern type, currency, and





Merchant Risk Profile

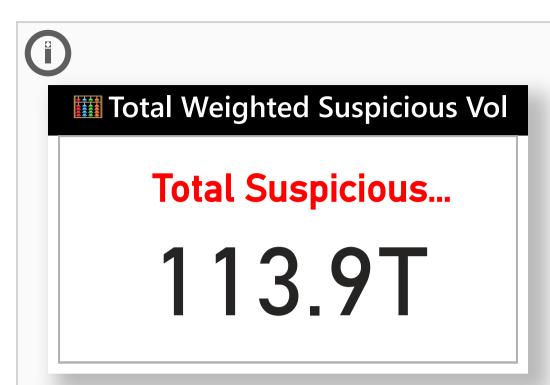
Time-Based
Suspicious...

Customer Risk Profile

Laundering Risk Summary & What-If Analysis

?

Analyze and adjust thresholds to expose laundering risks at scale.



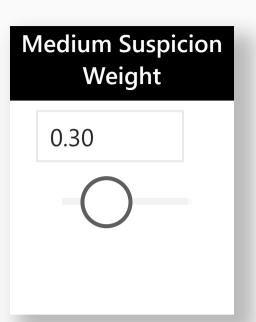
Suspicious Volume/Day

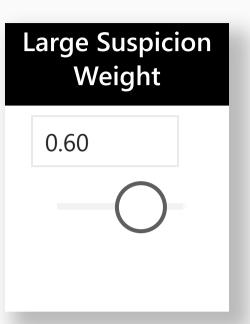
Suspicious Vol per Day

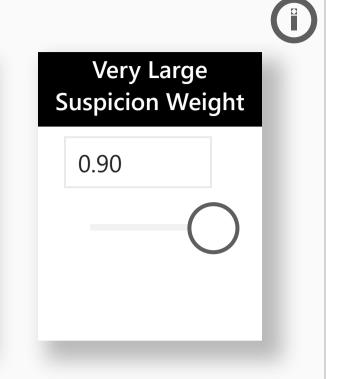
3.11bn

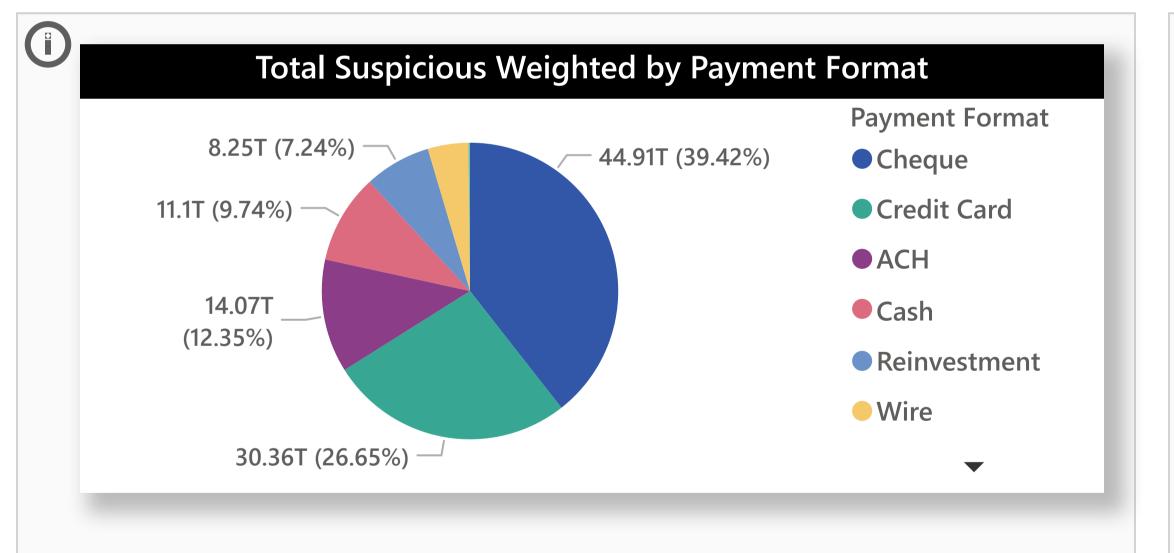
High Risk Merchants

2.6K









This page summarizes laundering exposure by analyzing suspicious volumes and high-risk merchant activity. KPIs, pie and bar charts illustrate risk by payment format, sender, and bank. What-If slicers adjust suspicious thresholds, while additional filters refine by bank, format, and transaction pattern.

