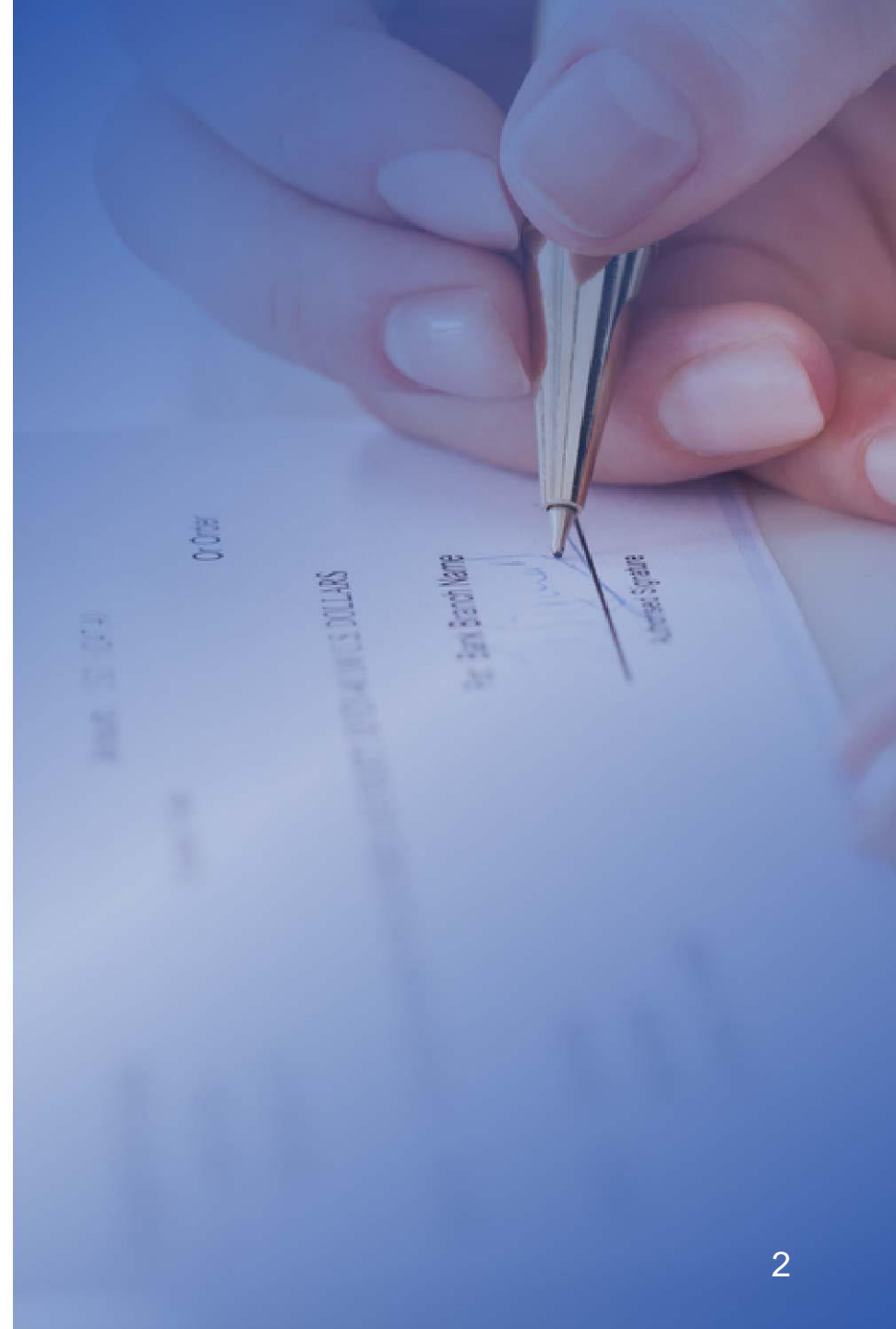# Are We in a Check Fraud Crisis?

David Rathke

Imaging Solutions Architect | FIS

OrboGraph: The Company

- Industry Leader of Innovative Technologies for nearly 30 years

  - Fraud Detection

  - Check Processing Automation

  - Payment Validation

  - Compliance

- Reaching 4,000+ institution clients

- Thompson Street Capital Partners portfolio of companies

FIS: The Company

- Item processing leader: over 40 years

- Distributed Capture Channels
  - Branch/Teller
  - RDC
  - Mobile
  - ImageATM
  - Lockbox

- Over 1,000 banks use image capture and Item Processing

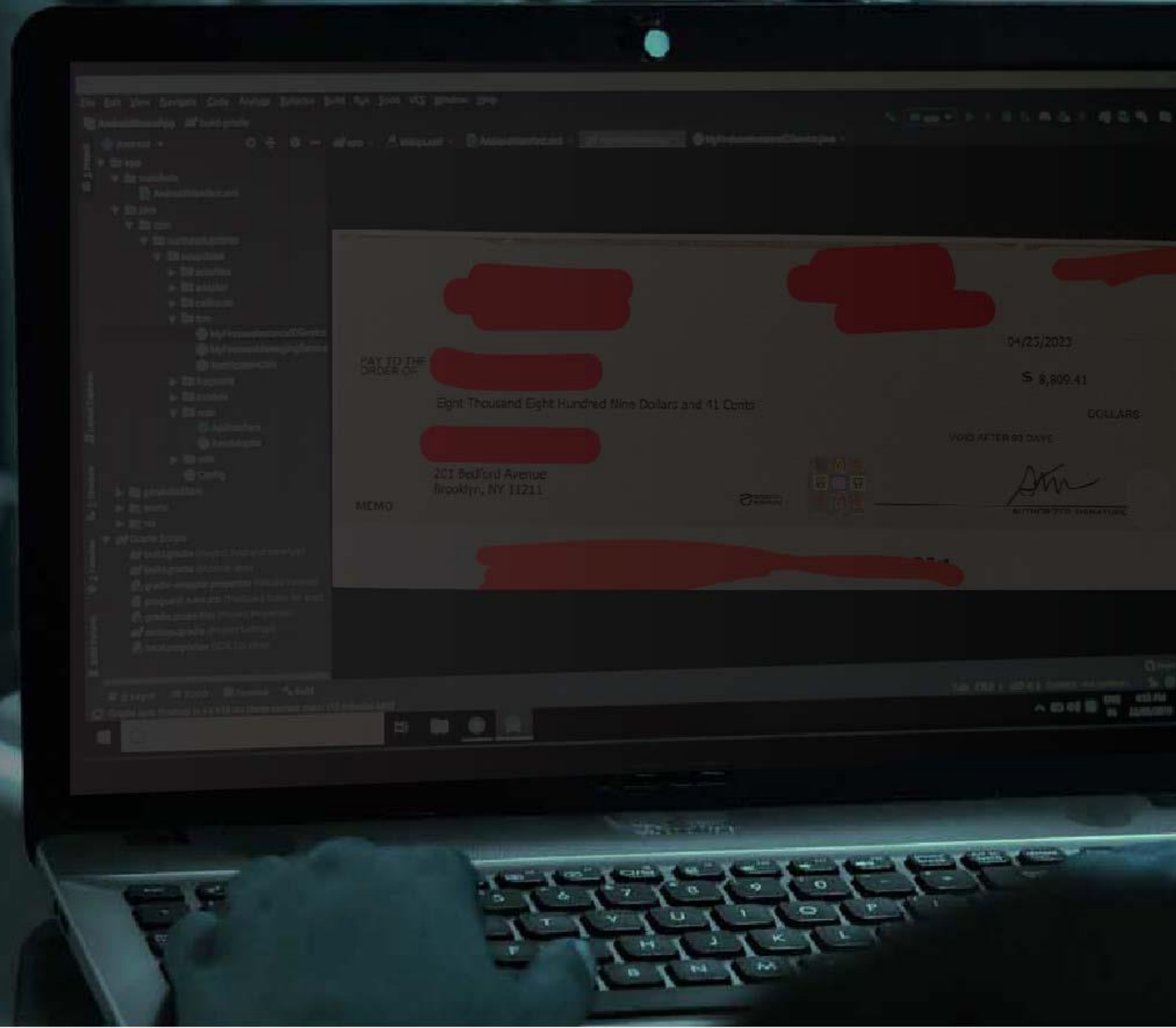- Process over 12 million items daily and more than 3 billion annually

Agenda

- Overview: Check Fraud Trends

- Check Fraud Exposure

- Check Fraud: Use Case Examples

- Modernizing Check Fraud Detection

- Questions

Overview:
Check Fraud Trends

OrboGraph
Intelligent Payment Automation

Poll:

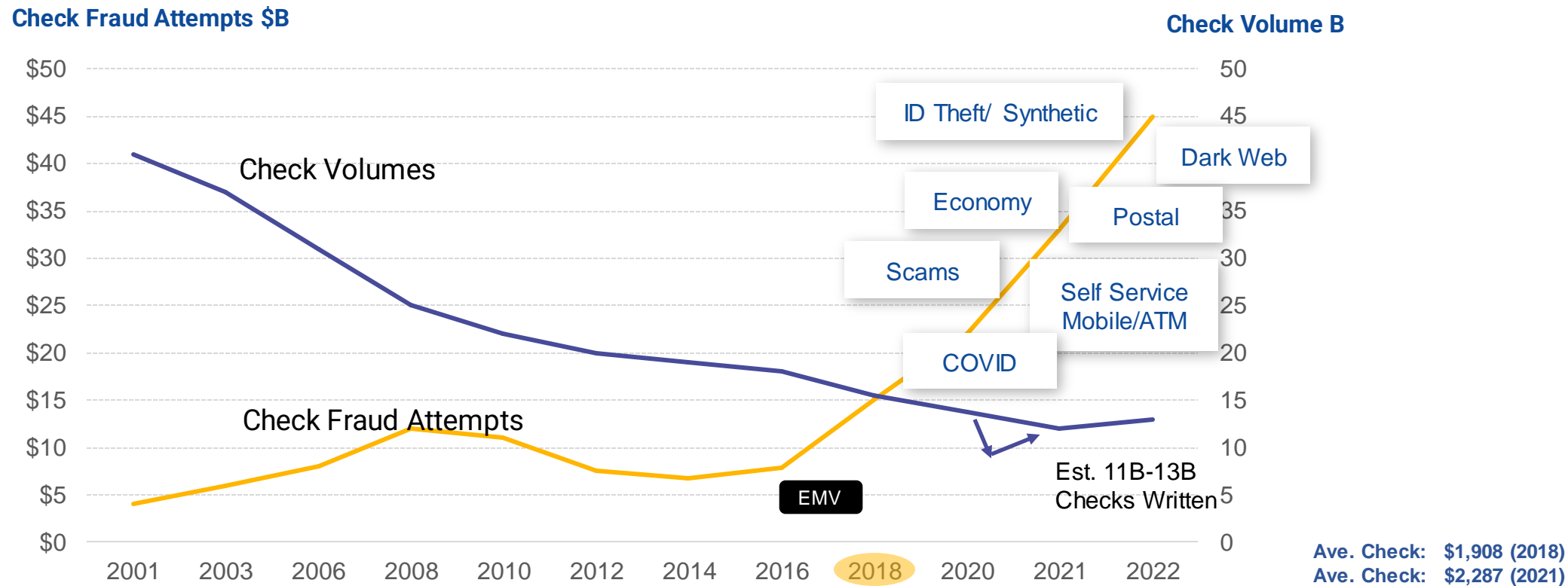Has your bank or credit union seen a significant rise in check fraud **attempts** over the past 2 years?

Poll:

Check fraud **losses?**

FRB stats

- Forward check volume was down about 7% in 22 compared to 21

- Forward check volume is down about 6% thru July compared to 22

- Total dollar value thru the Fed in 2022 same as 2010

- Return check volume was up about 15% in 22 compared to 21

- Return check volume is up about 4% thru July compared to 22

- NSF return type is declining while fraud return type is increasing

- Fraud related return items are higher than pre-Covid even though forward check volumes are down 25%-30% compare to pre-Covid
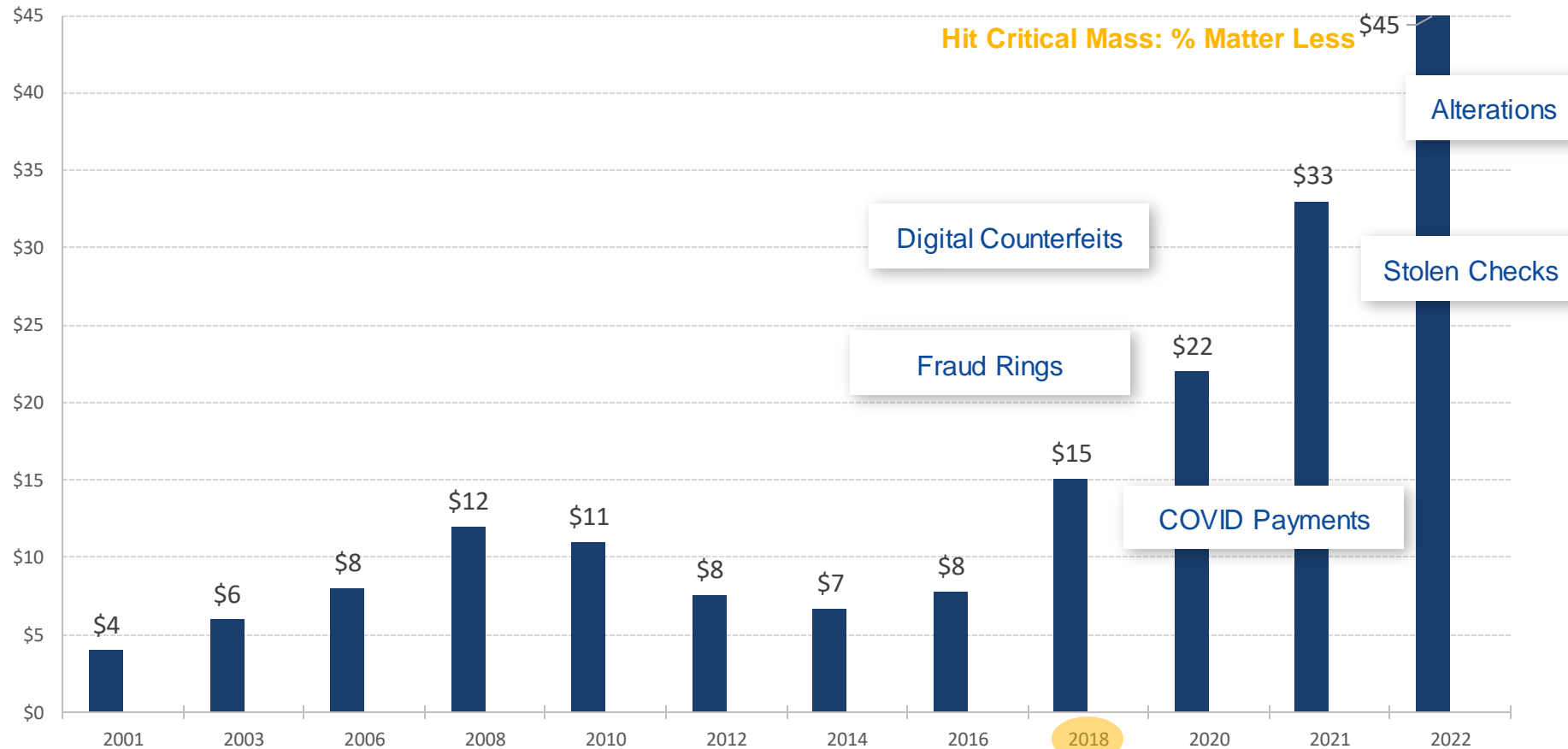
*Est. Industry Check Fraud Attempts vs. Volume

Check Fraud Attempts $B

Check Volume B

Check Volumes

Check Fraud Attempts

ID Theft/ Synthetic

Dark Web

Economy

Postal

Scams

Self Service Mobile/ATM

COVID

EMV

Est. 11B-13B Checks Written

$50	50
$45	45
$40	40
$35	35
$30	30
$25	25
$20	20
$15	15
$10	10
$5	5
$0	0

2001 2003 2006 2008 2010 2012 2014 2016 2018 2020 2021 2022

Ave. Check: $1,908 (2018)
Ave. Check: $2,287 (2021)

*Chart created by OrboGraph interpretation based on sources: Multiple news publications, check volume research, 3rd party sources, internal resources, customer surveys, market feedback.

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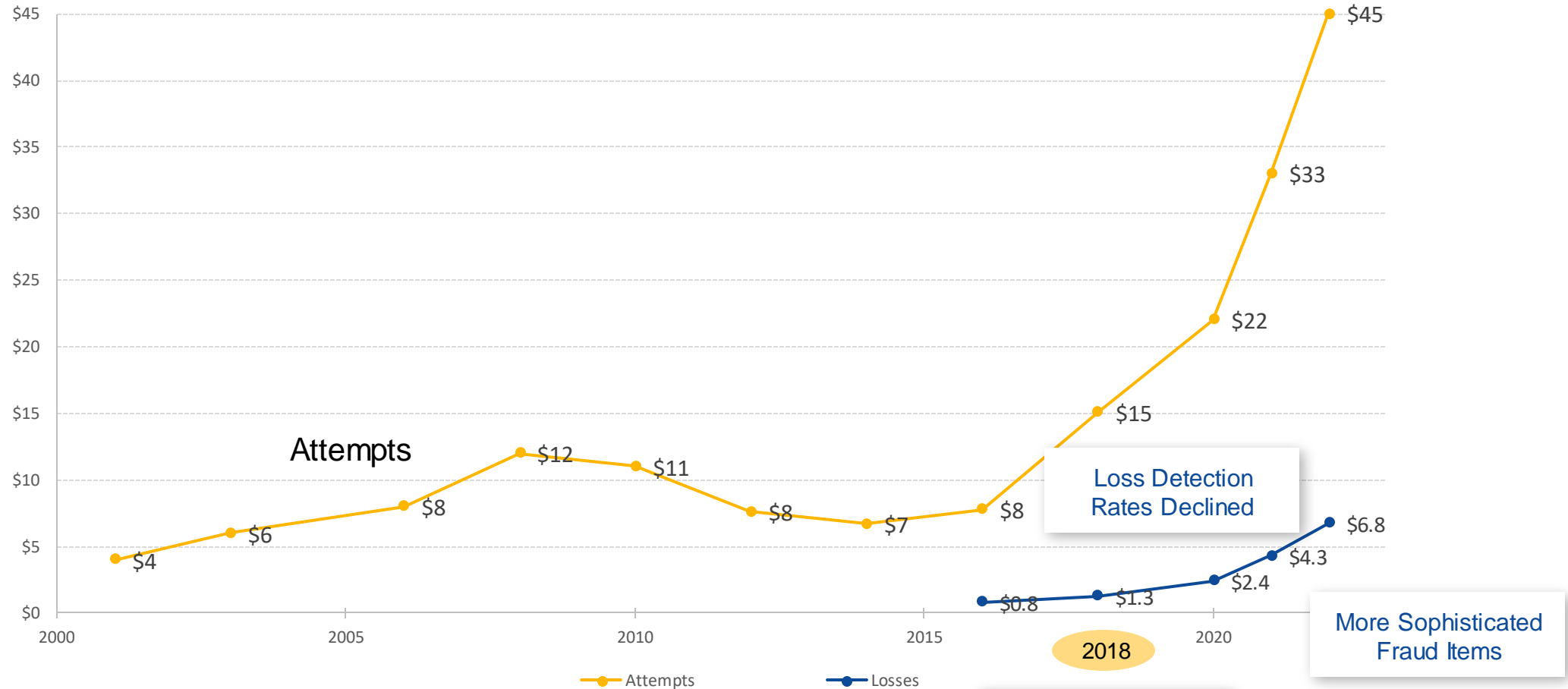# *Estimated Check Fraud Attempts

$ Fraud Attempts Billions

Bar chart showing estimated check fraud attempts in billions:
- 2001: $4
- 2003: $6
- 2006: $8
- 2008: $12
- 2010: $11
- 2012: $8
- 2014: $7
- 2016: $8
- 2018: $15
- 2020: $22
- 2021: $33
- 2022: $45

Labels: **Hit Critical Mass: % Matter Less**, Digital Counterfeits, Fraud Rings, COVID Payments, Alterations, Stolen Checks

*Chart created by OrboGraph interpretation based on sources: Multiple new s publications, check volume research, 3rd party sources, internal resources, customer surveys, market feedback.

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*Estimated Check Fraud Losses

$ Fraud Attempts/Losses Billions

Chart showing Attempts (yellow line) and Losses (blue line) in billions of dollars from 2000 to beyond 2020.

Attempts: $4, $6, $8, $12, $11, $8, $7, $8, $15, $22, $33, $45

Losses: $0.8, $1.3, $2.4, $4.3, $6.8

Callouts: Loss Detection Rates Declined; More Sophisticated Fraud Items; 2018; Staffing Reduction

*Chart created by OrboGraph interpretation based on sources: Multiple new s publications, check volume research, 3rd party sources, internal resources, customer surveys, market feedback.

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Hot Off the Presses: AFP Webinar

Checks Remain the Payment Method Most Vulnerable to Fraud

	Implemented	Very effective
Positive pay	92%	74%
Daily reconciliation and other internal processes	89%	51%
Segregation of accounts by function for single purpose	84%	48%
Payee positive pay	79%	78%
Tamper resistance features on checks	76%	34%
"Post no checks" restriction on depository accounts	69%	56%
Reverse positive pay	47%	53%
Non-bank fraud control services	41%	37%

Poll:
Are you familiar with the mailbox and postal carrier crime at USPS?

The Cliche: What's Old is New Again
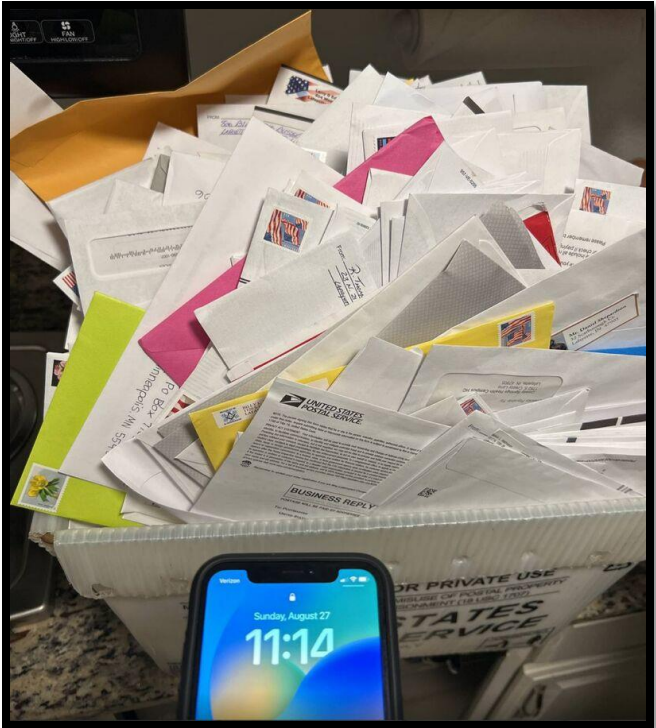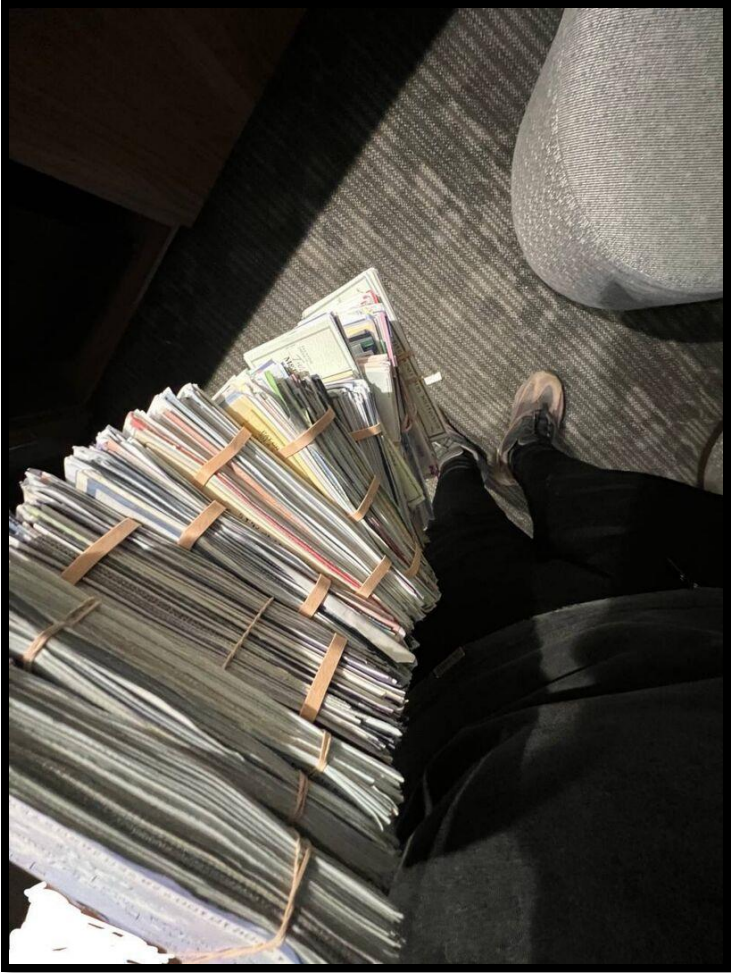
The Dark Web: The Check Fraud Marketplace

The Dark Web Check Fraud Ecosystem

Step 1: Mail Theft

Step 2: Black Market Sales

Step 3: Check Fraud

A "Few" Data Points

- According to USPS:
  - 25,000 incidents of theft from collection boxes YTD 2023
  - Compared to 38,500 in 2022
  - 412 letter carriers were robbed while on duty between Oct. 1, 2021 and Sept. 30, 2022
  - 305 letter carriers were robbed while on duty between Oct. 1, 2022 to March 31, 2023
  - Fraud is being fueled by an escalation of blue-box mail thefts and robberies of postal carriers, creating losses that amount to nearly $19 billion annually for the nation's financial sector (FBI).

- December 2022: WFLX calls an over 2500% increase of stolen checks sold on the dark web a "CRISIS." In October of 2020 there were about 115 stolen checks per week available for sale on the dark web. Today, that number has exploded to about 3,000 stolen checks per week available for sale in the dark web

- BlueVoyant research shows an over 500% increase in "check fraud IM groups" from January 2022 to February 2023, with each group posting an average of over 6K stolen checks per month

- Telegram and other encrypted messaging apps used to promote services including check washing, tutorials on how to physically and digitally alter stolen checks, and mule/walker services.
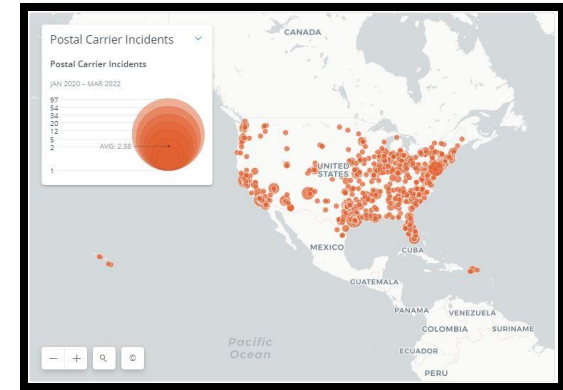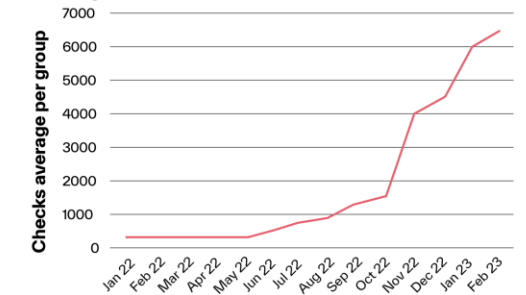
Figure 2: Average amount of fraudulent checks posted monthly in a single group
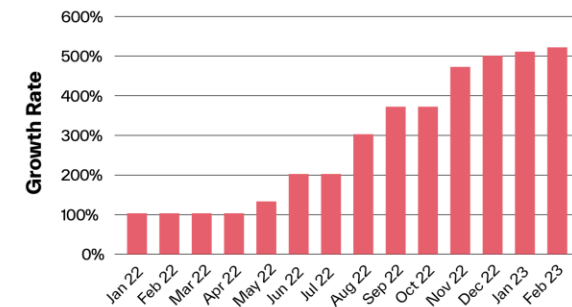

Figure 1: The increasing number of IM groups dedicated to check fraud over 2022

Check fraud leads to big Q3 charge at Regions Financial

By **Jordan Stutts**   October 23, 2023, 5:12 p.m. EDT   2 Min Read

Executives at the Birmingham, Alabama-based company warned that operational losses related to check fraud totaled $135 million between April and September, and will continue to weigh on the bank's future earnings.

Cases of check fraud escalate dramatically, with Americans warned not to mail checks if possible

RISK FRAUD & COMPLIANCE

Check theft and fraud are on the rise: What financial institutions can do about it

Tad Simons Technology Journalist/Thomson Reuters Institute

11 Sep 2023 · 6 minute read

Check Fraud Exposure

Diversified Deposit Channel Exposure

Credit Cards

ATM

Mobile

Cash

Online Banking

Teller

Branch

Mobile RDC

ATM

Inclearings

RDC

Remittance

Compliance

Marketing Applications

OrboGraph
Intelligent Payment Automation

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Major Fraud Types

- **Counterfeit**
  - Different check Stock
  - Serial Out Of Range or Duplicate
  - Many times different signature
- **Forgery**
  - Different signature
  - Same check stock
  - Serial in range
- **Alterations**
  - Font discrepancies
  - CAR ≠ LAR
  - Same check stock
  - Same signature
  - Serial in range
- **Payee**
  - Positive pay: Payee name verification
  - Account holder name match (Deposits)
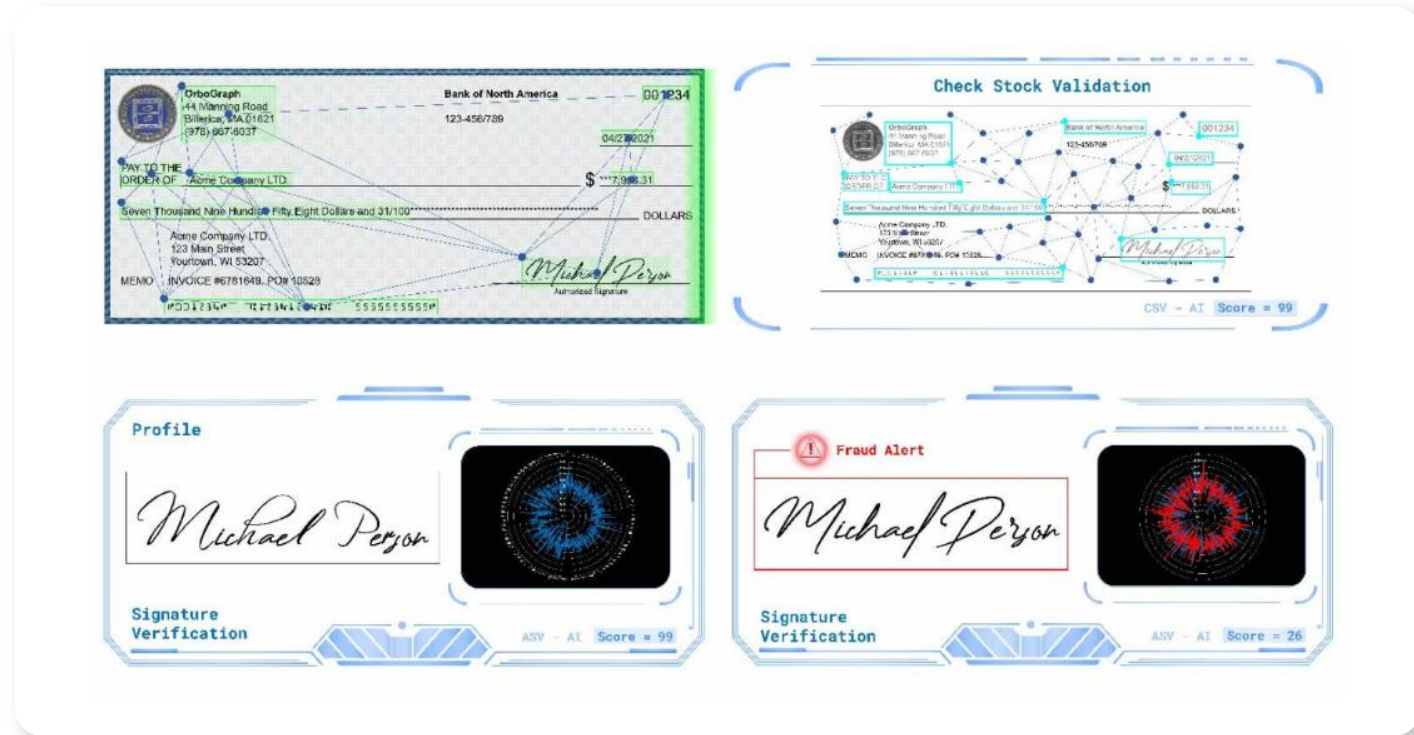
Check Workflow Working Against the FI
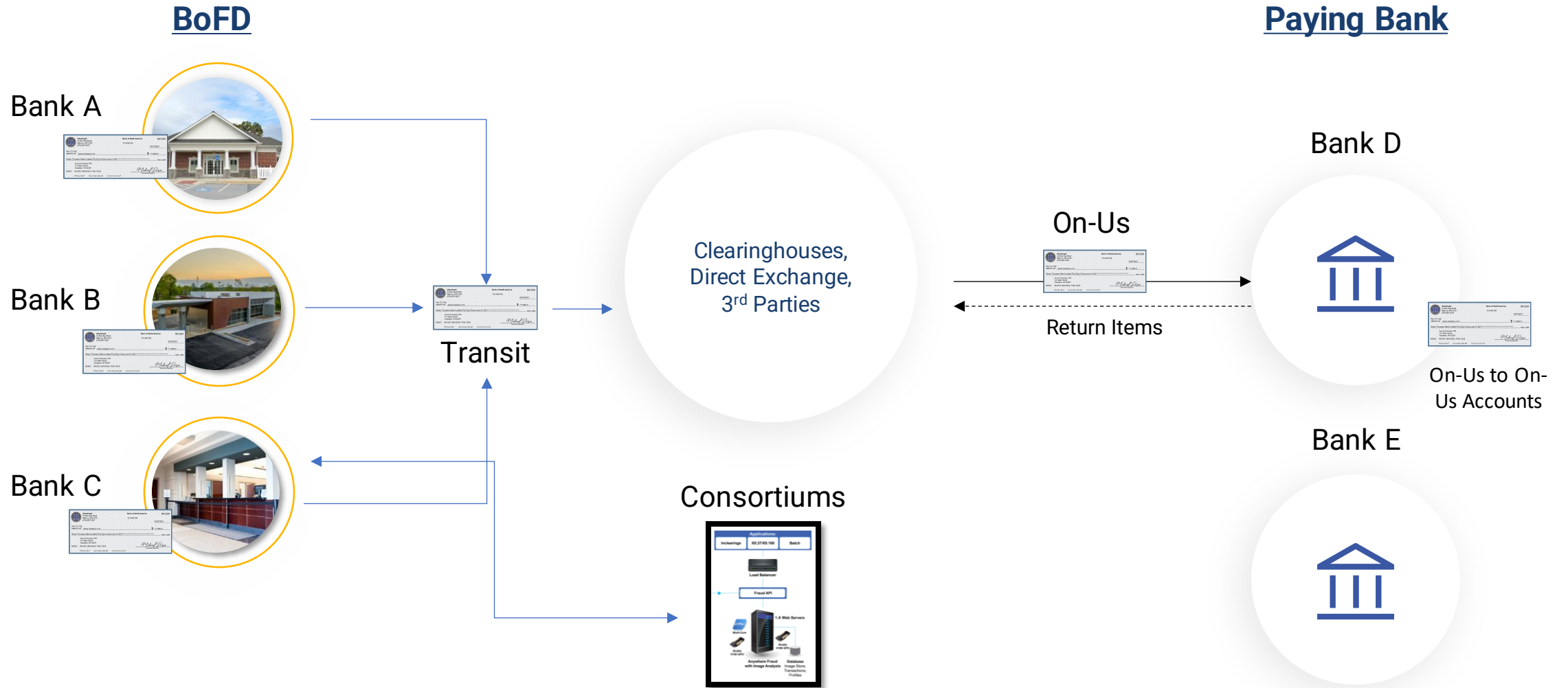
More Exposure…

- Self Service deposit channels
- Synthetic accounts
- Account take over
- Organized crime
- Money mules
- Real-time payment
- Friendly fraud
- 1st party
- 3rd party fraud

Check Fraud:
Use Case Examples

OrboGraph
Intelligent Payment Automation
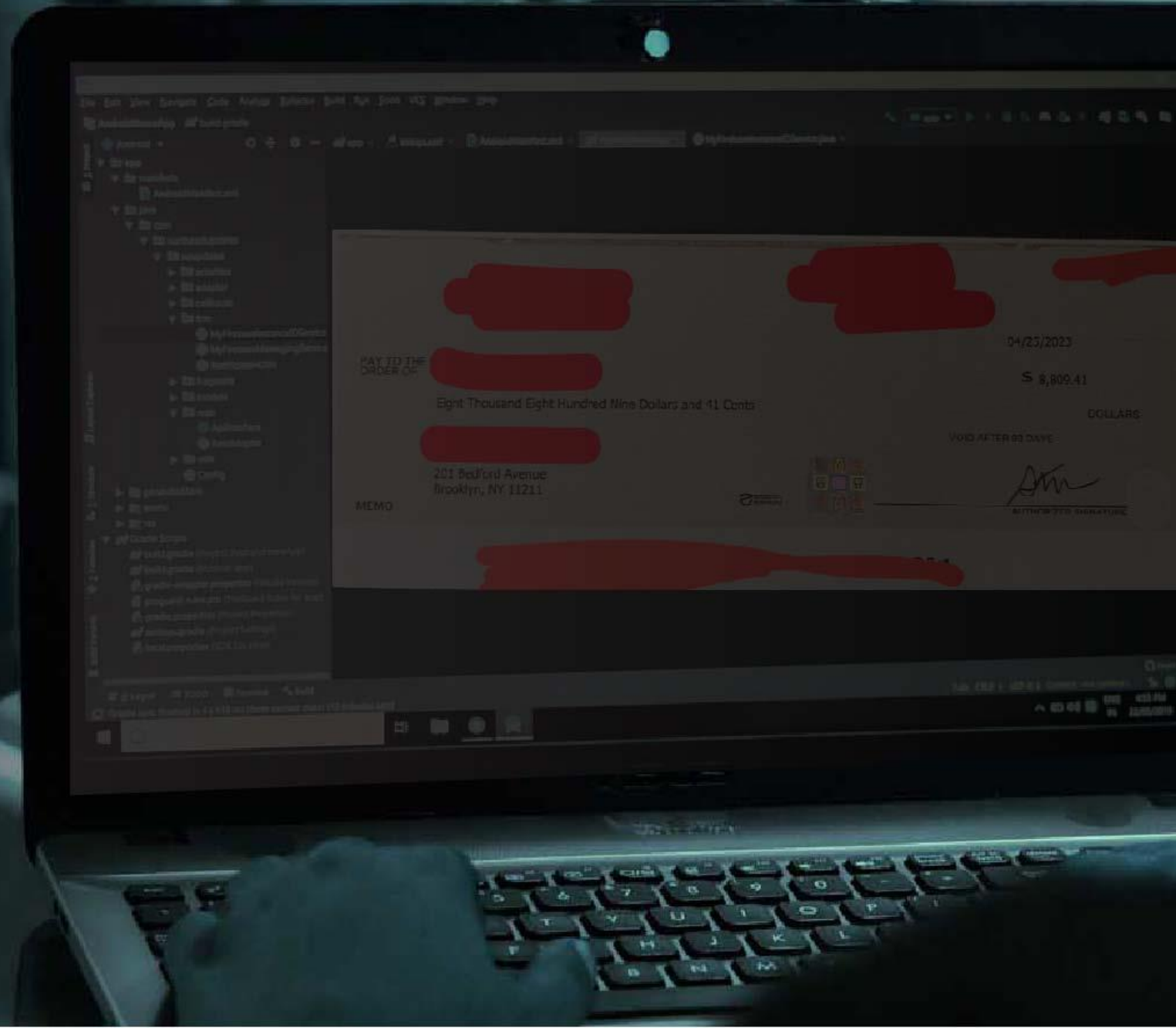
Semi-Skilled Counterfeit
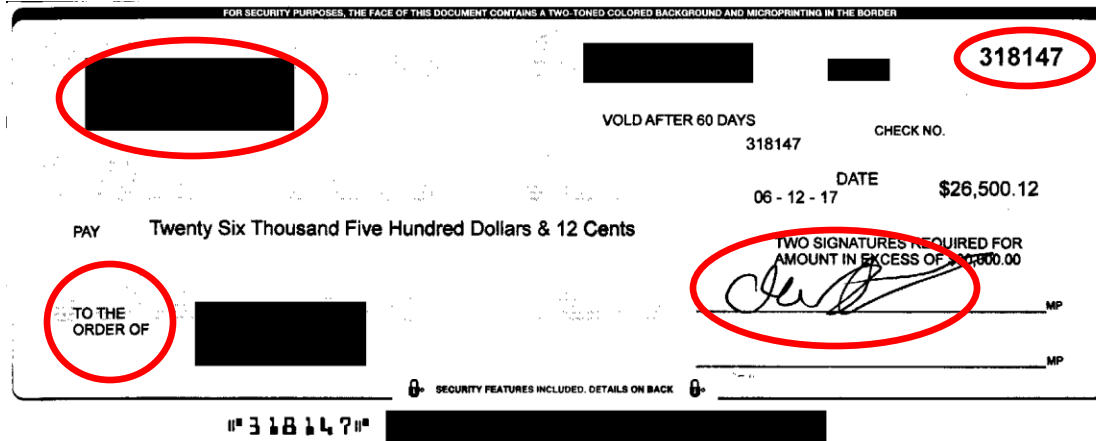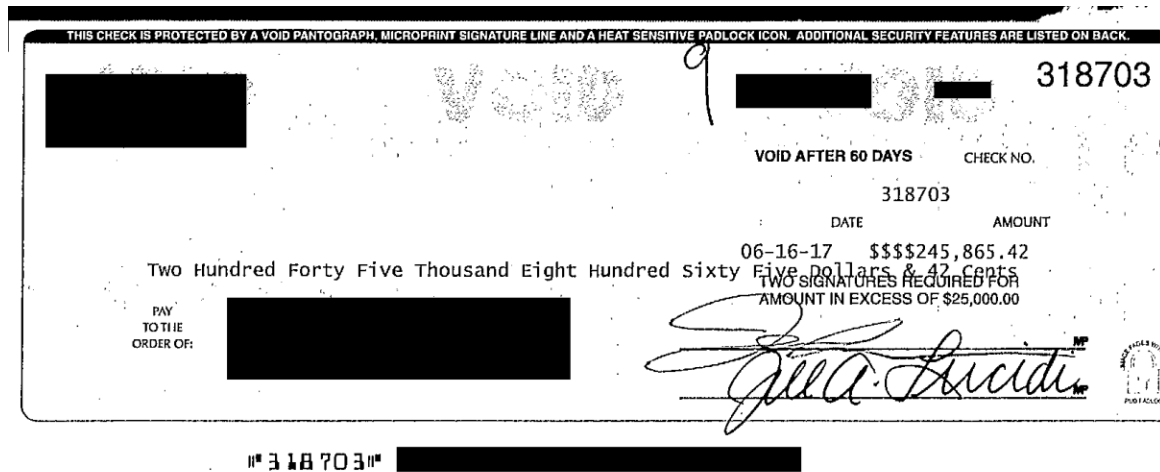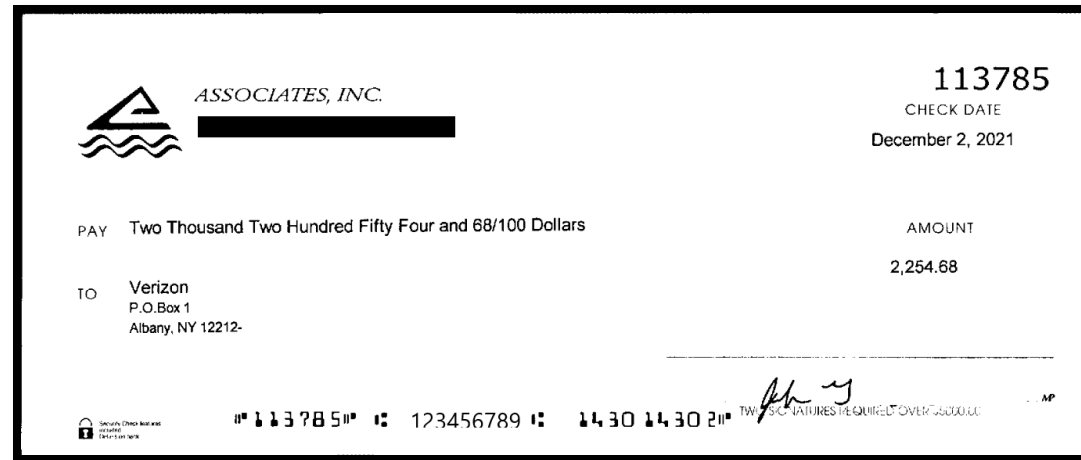

Fraud Item

Good Item

Skilled Counterfeit
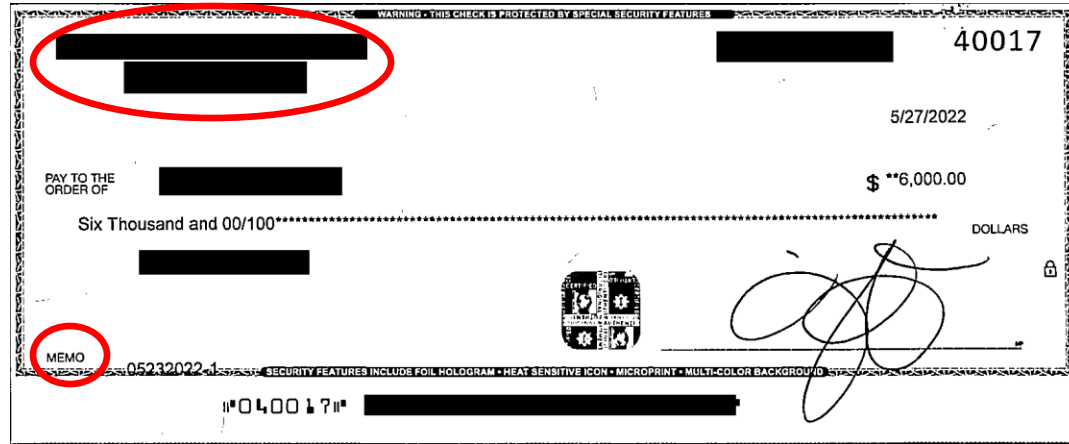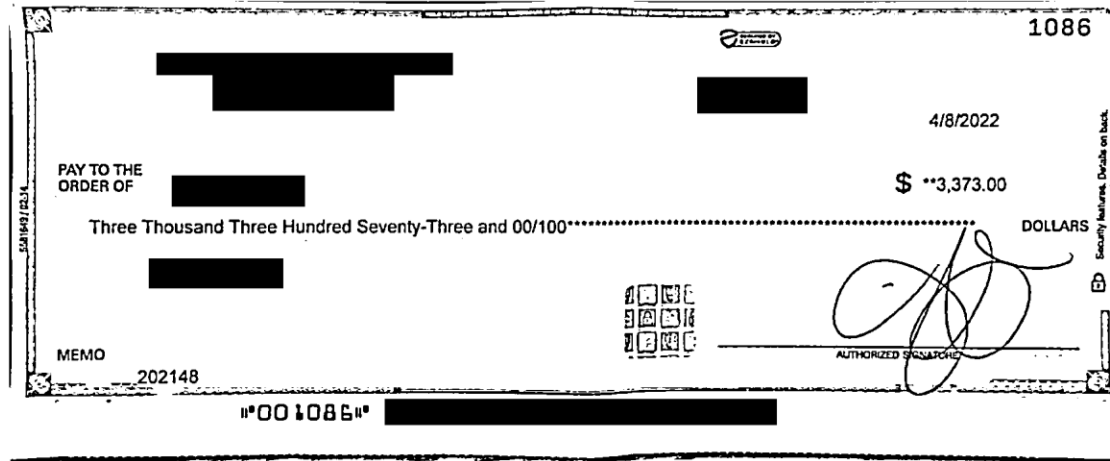
Fraud Item

Good Item

Skilled Alteration
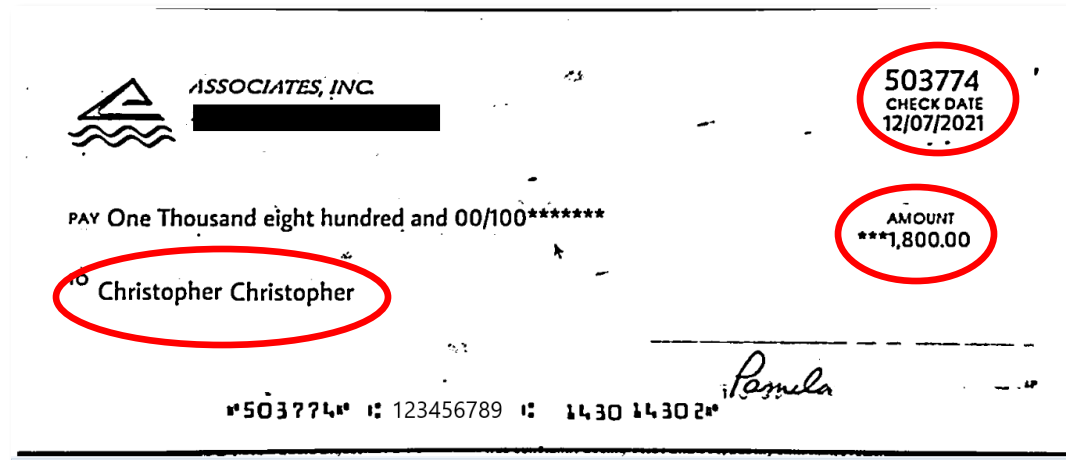
Fraud Item

Good Item

Stolen Check: Altered Payee

Fraud Item

Good Item
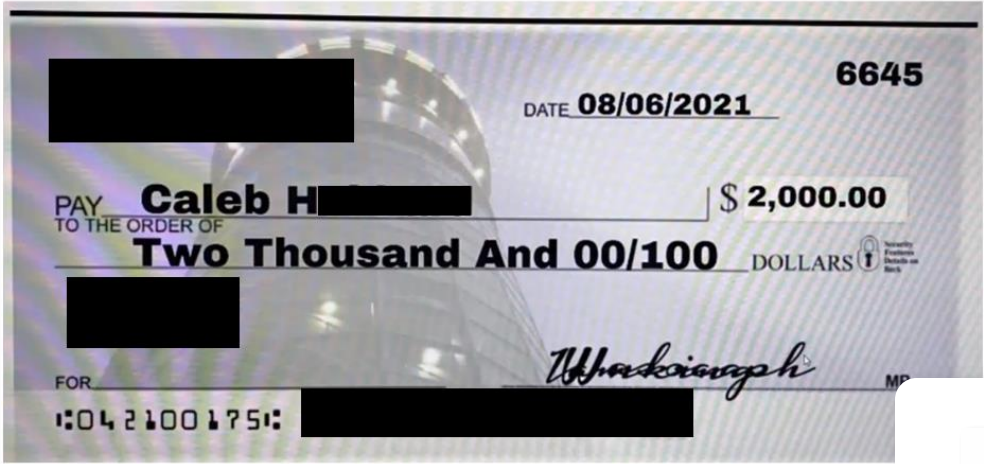
Image Examples: Altered Payee
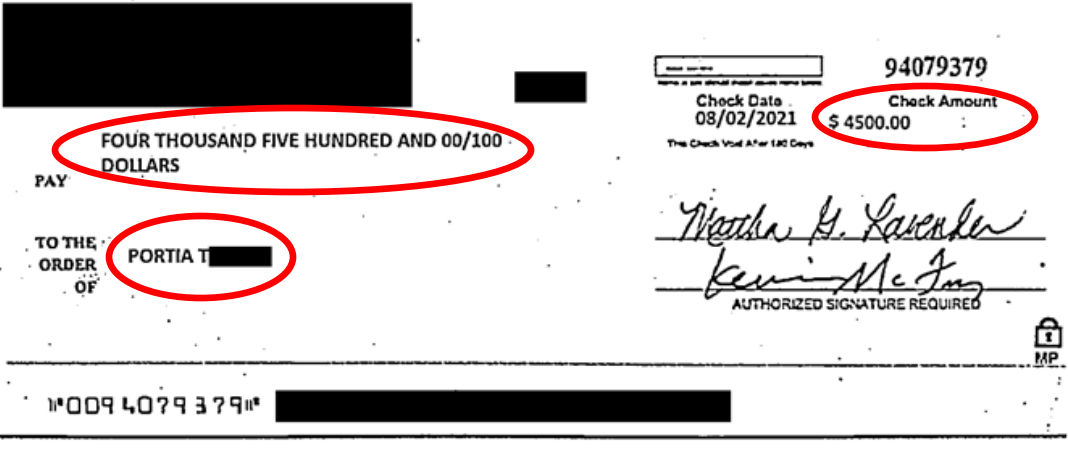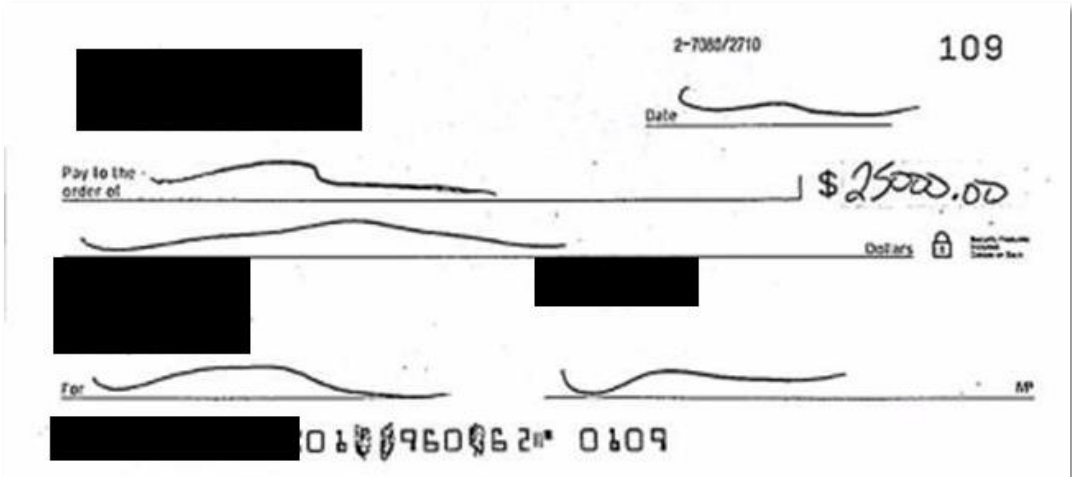

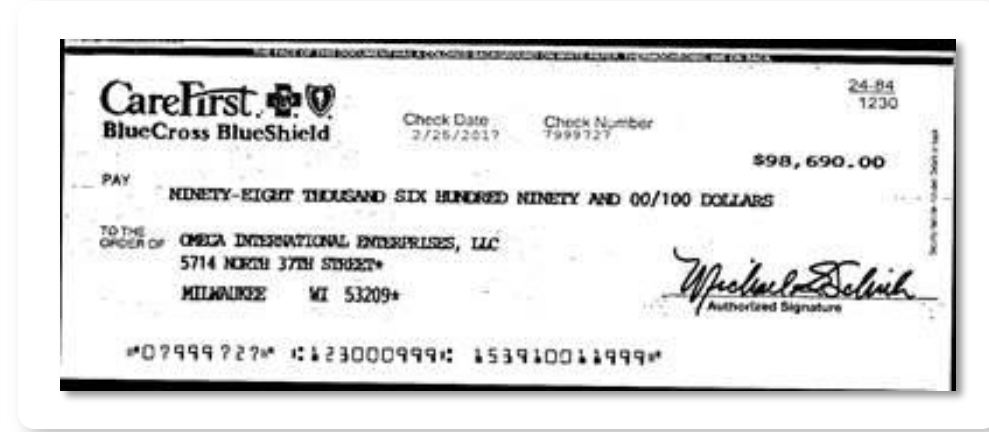**Fraud Item**
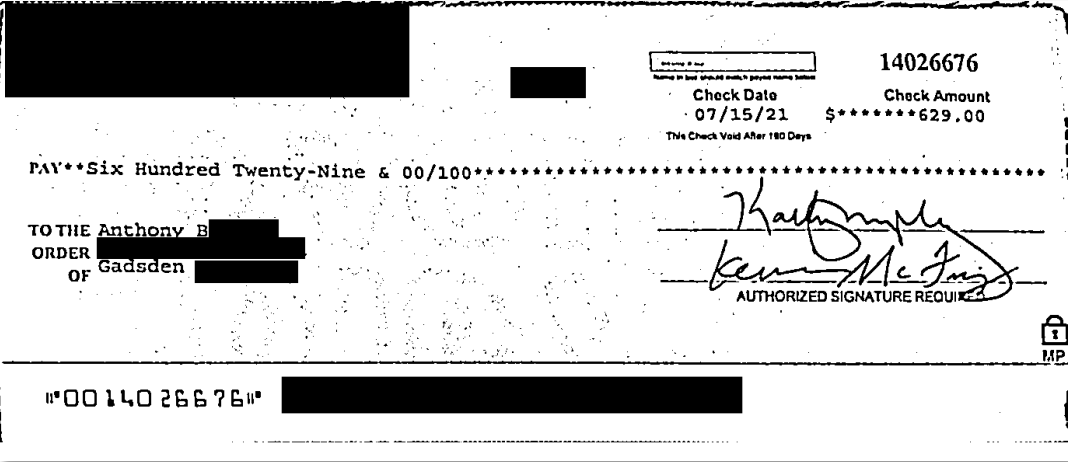
Good Item

Miscellaneous

Stolen Check
- Repurposed Signature
- Alteration or Counterfeit?

Actual Deposit Item

Image Use Case Examples

Fraudulent

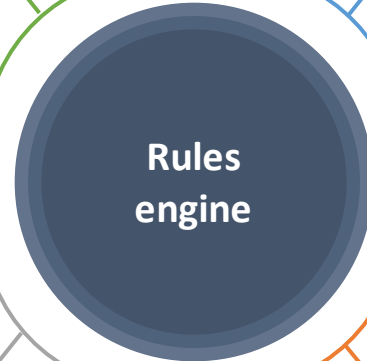# Modernizing Check Fraud Detection

Comprehensive Approach

Transaction Review

- Pattern analysis (serial, amount, velocity)
- Duplicate
- High dollar
- Positive and negative lists
- New account
- Account status / OD / NSF

Image fraud

- Automated signature verification
- Check stock validation
- Check style analysis
- Amount verification
- PAD/RCC Detection
- Payee matching

Rules engine

Deposit fraud

- Test against cross bank negative history
- Reference known bad accounts & items
- Recommend action based on risk score
- Consortium data sharing

Negotiability

- Image quality
- Amount discrepancies
- Signature presence
- Dual signatures required
- Endorsement presence
- Date – stale/post

Image Forensics: Techniques per Field

Payer Name/Address
- Free read OCR, Watch Lists,
- Marketing (Transit Checks), AML

Date
- Negotiability (Stale/Post Dated),
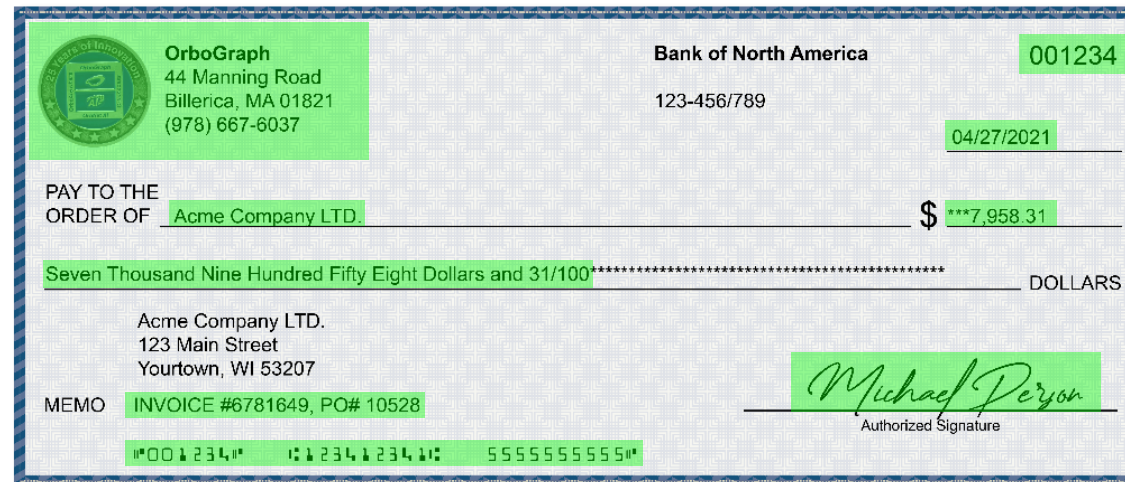- Positive Pay, Fraud Detection

Check Number
- Positive Pay, Fraud Detection, Image Integrity, MICR Repair

Payee
- Positive Pay - Payee Alteration,
- Acct. Holder Name Match,
- Watch Lists, Free Read Business
- Remittance Posting,
- Marketing Data Dictionary

Memo Line
- Remittance,
- AP Posting
- Fraud

Courtesy Amount
- Recognition, Amount Verification,
- CAR/LAR Discrepancy, Check Style Analysis (Font Discrepancy)
- Positive Pay, Fraud
- Detection, Image Integrity

Legal Amount
- POD, Amount
- Verification, Positive
- Payee, Fraud Detection,
- Image Integrity

Check Stock Validation
- Counterfeit Detection
- On-us & Transit

MICR Line
- Mobile Recognition
- MICR Repair,
- Image Integrity

Signature
- Negotiability
- Forgery Detection
- PAD Detection
- Multiple Signers Required

OrboGraph
44 Manning Road
Billerica, MA 01821
(978) 667-6037

Bank of North America

123-456/789

001234

04/27/2021

PAY TO THE ORDER OF   Acme Company LTD. $ ***7,958.31

Seven Thousand Nine Hundred Fifty Eight Dollars and 31/100**   DOLLARS

Acme Company LTD.
123 Main Street
Yourtown, WI 53207

MEMO   INVOICE #6781649, PO# 10528

Michael Person
Authorized Signature

⑆001234⑆ ⑇123412341⑇ 5555555555⑈

AI-based Signature Verification

- **Utilizing AI and deep learning models for automated signature verification**

- Reflecting the probability that two signatures are signed by the same signer

Image Forensics – Check Stock

- **Analyzes the attributes, layout, relative coordinates and dimensions of select preprinted fields as "anchor points"**

- **Precision = accuracy for locating fields of interest**

- **Measurements**
  - Dimensions/size/distance
  - Relative positioning
  - Triangulation

- **Image analysis comparison**
  - "Known good"
  - "Known bad"

Check Stock & Facial Recognition: Similar Concepts

Alteration Detection Technology

- Check Style Analysis
- CAR/LAR Discrepancy
- Payee Detection
- Handwriting Style Analysis - comparing to previously cleared checks

Questions?