

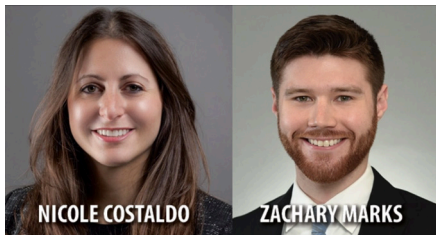
# MASSACHUSETTS Lawyers Weekly

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## Unraveling Ponzi schemes using advanced data analytics

By Nicole Costaldo and Zachary Marks



History shows that economic downturns can result in the failure and discovery of Ponzi schemes. Many fraud experts believed the COVID-19 recession would result in an increase in Ponzi scheme discoveries. However, they actually decreased between 2019 and 2020, both in terms of number of schemes discovered as well as related investor funds lost.

The reason why 2020 was not 2008/2009 is relatively simple: The COVID-19 recession lasted just two months compared to the 18 months of the Great Recession.

In the early months of an economic decline, Ponzi schemers may assure victims that their investments are safe. However, if an economic downturn continues long enough, fear prevails and investors may decide to reduce their market exposure by withdrawing funds.

Cash withdrawals are the enemy of a Ponzi scheme, and if the fraudster cannot find new money to fund the growing withdrawal demand, the Ponzi is all but doomed to fail.

In Wall Street's most infamous Ponzi scheme, Bernard L. Madoff In-

vestment Securities LLC – BLMIS – was able to stay afloat for decades, surviving several recessions, the Sept. 11 terrorist attacks, the dot-com bubble collapse, and Black Monday 1987, among many other major market events. BLMIS did not ultimately fail until December 2008, an entire year after the beginning of the Great Recession.

As a lesson learned from the Great Recession, unprecedented fiscal and monetary policy was implemented in 2020 that dramatically reduced the duration of the COVID-19 recession.

However, the unintended result of this remedial action is that the recession may not have dealt a killing blow to Ponzi schemes in operation today. In fact, the combination of low interest rates, massive government stimulus, and the rise of alternative investments has created an extremely friendly environment to Ponzi schemes both old and new.

Fraud investigators, trustees and receivers need to stay vigilant and prepared for the next major Ponzi collapse. In the past, the lack of modern technology made it difficult to unwind complex financial transactions and recover stolen funds from a Ponzi scheme. Today, technology and the application of advanced analytics have changed the game, bringing unprecedented Ponzi scheme recoveries within reach.

In the Madoff case, the Securities Investor Protection Act trustee for

BLMIS reports that approximately \$14.5 billion has been recovered as of Jan. 20, 2022. This represents about 75 percent of the \$19.4 billion in allowed principal claims, and recovery efforts are still ongoing. Recovery successes like Madoff simply would not be possible without the application of advanced analytics.

### Using data and analytics

Successfully unraveling a Ponzi scheme and maximizing recovered funds requires leveraging data and analytics expertise and related tools to:

- catalog, validate and consolidate core data sources and documents
- reconstruct the books and records
- identify red flags
- investigate and report

### 1. Consolidate core data and documents

Identifying the core systems and documents being used in the Ponzi scheme should be one of the first steps taken by investigators. An analysis of these systems and records can provide insight as to whether any purported investments were “real,” who was involved in the scheme, and how the scheme operated.

Using advanced analytics and data transformation procedures, investigative teams can digitize and catalog the hard copy documents while the electronic data can be forensically extracted, de-duplicated and restored.

Once this catalog and inventory of

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sources has been completed, the investigative team can familiarize itself with how the scheme was recorded and which documents and information are key to reconstructing the books and records.

## **2. Reconstruct the books and records**

Using the now-transformed data, data scientists can create an analytic model that is reliable, verifiable and dynamic enough to be tweaked for various inputs and scenario testing. In a Ponzi scheme investigation, this is also known as the reconstruction of the books and records.

Advanced analytic techniques should be used to format and consolidate like and disparate sources to gather a chronological listing of facts and events. This can be a complex step, as Ponzi schemes may store

multiple sets of books, partial or incomplete records, and data that has been overwritten.

To overcome these obstacles, data professionals will compare electronic records to produced reports and, when possible, extract and parse key details from third-party sources to verify the analytic model underway.

The completed analytic model should be able to turn on and off certain features for efficient and robust analysis. The use of a single, robust model ensures that the same assumptions and foundation are used in each analysis.

Careful design and preparation of an analytic model of this nature provides a funnel to analyze the business at varying levels and attributes. That includes the ability to: 1) recreate how the business/program worked, 2) determine the financial state of the business, 3) analyze specific customer accounts, and 4) quantify purported investing activity.

## **3. Identify red flags**

After the analytic model is built, investigators can efficiently apply advanced analytic methods and exploratory data analysis to identify atypical patterns and red flags.

Red flag analyses range in complexity and could include identifying backdated trades, trades when the market is closed, and trades outside of the daily price range.

More complex red flags should also be built with input from industry experts. This could reveal statistically impossible returns given the underlying reported investment strategy and associated risk.

The activity highlighted by red flag analyses can identify evidence of the Ponzi scheme and potentially reveal

individuals who knew or should have known that a fraud was taking place.

## **4. Investigate and report**

An analytic model of this nature becomes the foundation for investigative analyses, reporting, and key calculations used to aid in recovering stolen funds. This model can be used as an input for advanced analytic techniques that enable network and relationship analysis to identify unknown related parties, trace the flow of funds, and quantify amounts received by insiders of the Ponzi scheme.

Furthermore, reporting can be designed to output claim determinations, a chronological history of an investor's balance over time, and exhibits that can be used in legal filings and expert reports.

Although not a comprehensive overview of how to use advanced analytics in a Ponzi scheme investigation, these examples provide a glimpse into how advanced analytic tools and methodologies are used to quickly unravel Ponzi schemes and create the foundation for a consistent, verifiable and manageable source of truth.

The use of these technologies, in concert with a well-qualified team of experts in data science, forensic accounting, and other subject matter specialties, is crucial to ensuring successful recoveries and outcomes for Ponzi scheme victims.

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