Mutual Fund/Corporation Director Overlaps: Two Studies

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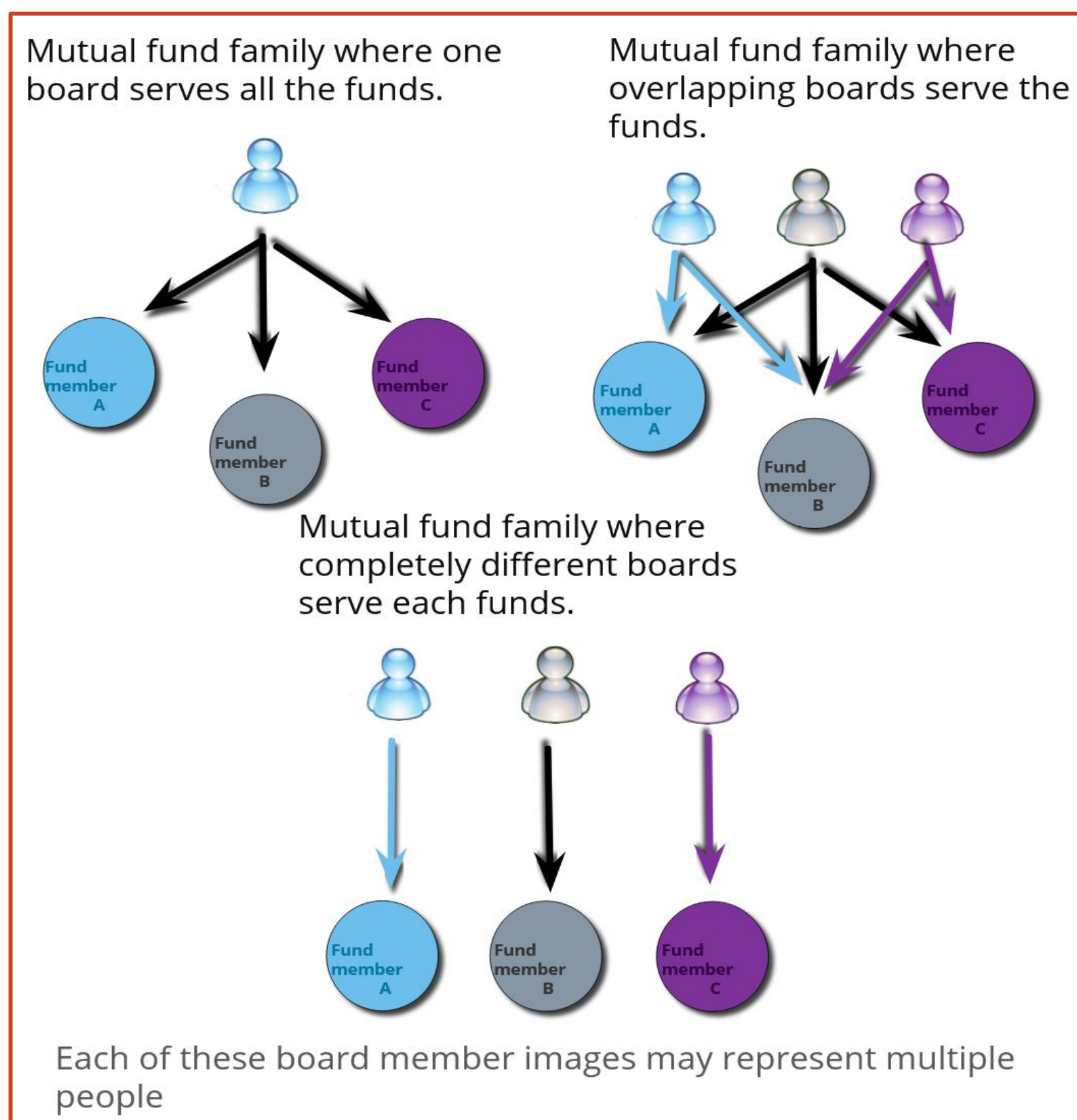
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Introduction

A mutual fund pools money from many investors to purchase tradable assets. While firms' management is advised and monitored by a board of directors who are elected by shareholders, funds have trustees who are elected by investors. A large literature has found that funds with effective boards have higher performance.

Our current work is preparing data for two studies.

1. Investigate the impact of overlapping boards on funds' performance
2. Examine the impact of connections between fund trustees and firm directors on the funds' and firms' operations.

Boards of Directors

- Each mutual fund is required to have a board.
- Funds belong to families, which tend to appoint boards to oversee simultaneously multiple funds.
- Corporations also have boards of directors.
- Both types of boards include inside directors, who are usually top management, and outside directors, who are assumed to be independent.
- Individuals can serve simultaneously or subsequently on boards of mutual funds and corporations.
- Directors with firm-fund connections may have private information; this information asymmetry could affect the actions of the directors.

Each of these board member images may represent multiple people

Two Studies

Two overlapping studies are being conducted using the mutual fund director dataset.

- **Study 1: Mutual Fund Boards Overlap**

We want to know the types of overlapping board structure observed in the fund industry and how the overlap affects the funds' characteristics and performance.

- **Study 2: Mutual Fund Board and Corporate Board Overlap**

We want to learn how the work experiences of directors across mutual fund boards and corporate boards affect the funds' investments or the firm's operations.
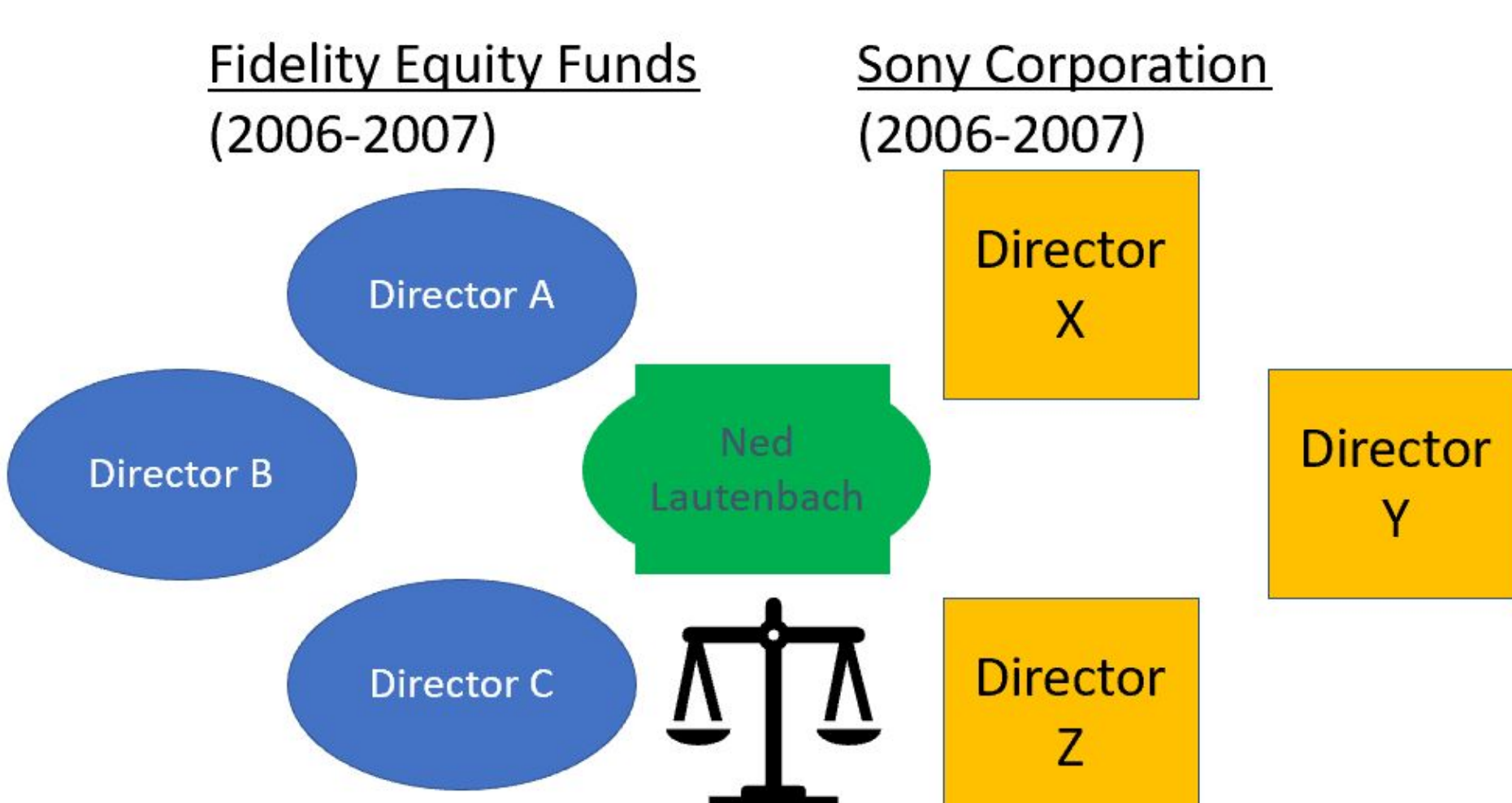
Representative example: Ned Lautenbach served on the board of Fidelity Equity Funds from 2000-2014, and Sony Corporation from 2006-2007

Data

- Mutual Funds are required to publicly release N-CSR filings (i.e., a combined reporting form) that discloses information about board membership.
- The Securities and Exchange Commission's (SEC) EDGAR system archives N-CSR filings
- Using a text scraper/web-crawler, data was collected from the SEC EDGAR system to create a sample of the 601 actively managed equity funds sponsored by the 25 largest fund families in 2008-2020.

col_1	col_3	ticker	filing date
INDEPENDENT DIRECTORS(a)			2018-12-21
Bruce W. Duncan (1951) 2013	Chief Executive Officer and..	PRFEX	2018-12-21
Bruce W. Duncan (1951) 2013	Chief Executive Officer and..	PRFEX	2016-12-21
Bruce W. Duncan (1951) 2013	President, Chief Executive...	PRFEX	2015-12-21
OFFICERS		PRFEX	2018-12-21
John R. Gilner (1961) Chief Co	Chief Compliance Officer...	PRFEX	2018-12-21
John R. Gilner (1961) Chief Co	Chief Compliance Officer...	PRFEX	2017-12-21

This is a sample of the data collected by the web crawler program after some general data management has been performed.

Cleaning

- The scraped data presents many different issues. These issues were observed within individual funds over time and within families at common points of time. The most common issues include:
  - Inconsistent formatting of data
  - Duplicate observations
  - Paragraphs of extraneous information around names (e.g., full bibliographic entries covering an individual's professional history to date)
  - Prefixes and/or suffixes are recorded inconsistently
  - "Year of birth" is often reported as current age
  - Last name changes during sampling period (e.g., some women changed names upon marriage)
  - Some entries are missing first names and age or year of birth
  - Spelling errors (e.g., typos such as John or Jon)

- Each mutual fund's data is initially formatted as its own data frame or as a list of data frames.
- Each fund's filings are different and so the data frames need to be cleaned by hand to address the differences
- Some funds had similar cleaning challenges since their filings were assembled by the same sponsor and they belonged to the same fund family.

- The biggest problem we faced was that the filings often presented two types of individuals together without clearly indicating whether an individual was a trustee (also known as a director) or a management officer.
  - This problem alone led one student to work on this data for all of the spring '21 semester under a student/faculty research grant, and two of us to work on this data in summer '21 through the QAC.

- Using 34 functions written on R by past student research assistants, and pattern-matching functions, data was manually cleaned to include only information about trustees (i.e., individuals with voting power).

- Depending on the structure of the board in its filing, two main methods were used to separate management officers from trustees:
  - Pattern Matching - a character string (i.e., pattern) was matched with each element of a character vector (i.e., column in dataframe)
  - Manual Subsetting - N-CSR filings were studied to distinguish between officers and trustees, and consequently the dataframe was subsetted.

- Once raw data was transformed to a cleaned dataset, it contained six columns:
  - Ticker (Fund Name)
  - Filing Date (Date N-CSR was filed)
  - Name (in the format "FirstName MiddleInitial LastName")
    - Prefixes and suffixes were dropped due to inconsistent (and relatively rare) usage
  - Age
  - 2nd Last Name
    - This was only for individuals who were observed to have changed surnames.

ticker	filing_date	names	ages	lastname2
PRFEX	2018-12-21	Bruce W Duncan	1951	NA
PRFEX	2016-12-21	Bruce W Duncan	1951	NA
PRFEX	2015-12-21	Bruce W Duncan	1951	NA

The same sample of data after cleaning.

Future Work

Study #1: Mutual Fund Board Overlaps
- Construct measures of overlapping boards within fund families
- Estimate models such as

$OUTCOME_{it} = \beta_0 + \beta_1 Overlap_{it} + \beta_2 X_{it} + \varepsilon_{it}$
  - Outcomes include expenses, return gap, performance, performance transfer, and window dressing

Study #2: Corporate and Fund Director Overlaps
- Fuzzy matching of fund director names with firm director names as reported in BoardEx database.
  - The fund directors and BoardEx dataset may have non-standardized presentations of names

Name 1	Y.O.B. 1	Name 2	Y.O.B. 2	Match
Youse Guia	1972	Youse E Guia	1972	Yes (Omitted initial)
J Stephen King	1962	J Stephen King Jr	1962	Yes (Omitted suffix)
Petesr G Strelow	1970	Peter G Strelow	1970	Yes (Typo)
Deborah A DeCotis	1952	Deborah A Zoullas	1952	Yes (Name change)

- Estimate models such as

$OUTCOME_{it} = \beta_0 + \beta_1 Director_{it} + \beta_2 X_{it} + \varepsilon_{it}$
  - Director will be estimated separately to capture count and frequency of current and past director overlaps between the fund and firm

Acknowledgements