

Endowment Tme Series for Report

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Definitions:

- OtherExpendituresAmt: Other expenditures for facilities and programs

```
## # A tibble: 0 x 7
## # i 7 variables: EIN <chr>, TaxPeriodEndDt <date>, TaxPeriodBeginDt <chr>,
## #   begin_week <dbl>, begin_year <dbl>, sp500_begin <dbl>, sp500_end <dbl>
```

Annual Growth Rate

The annual growth rate is the percentage change in a year. That is,

$$\text{growth rate} = \frac{\text{Beginning Value} - \text{End Value}}{\text{Beginning Value}}.$$

We can compute this for the S&P 500 for the same time interval. Here, we use mean value of the S&P 500 to the previous week compared to the beginning and end dates of each company's fiscal year.

To account for withdrawals and contributions, we add back withdrawals and subtract contributions, so we calculate the annual growth rate as

$$\text{Annual Growth Rate} = \frac{(\text{End Value} + \text{Other Expenditures} + \text{Grants and Scholarships} + \text{Administrative Expenses} - \text{Contributions}) - \text{Beginning Value}}{\text{Beginning Value}}$$

This adjustment is important because we want to see how much of the change from the beginning of year balance to the end of year balance is due to the investments, not, for example, a large contribution.

Annual Growth of S&P 500 Compared to Top 15 Companies by Size of Endowment

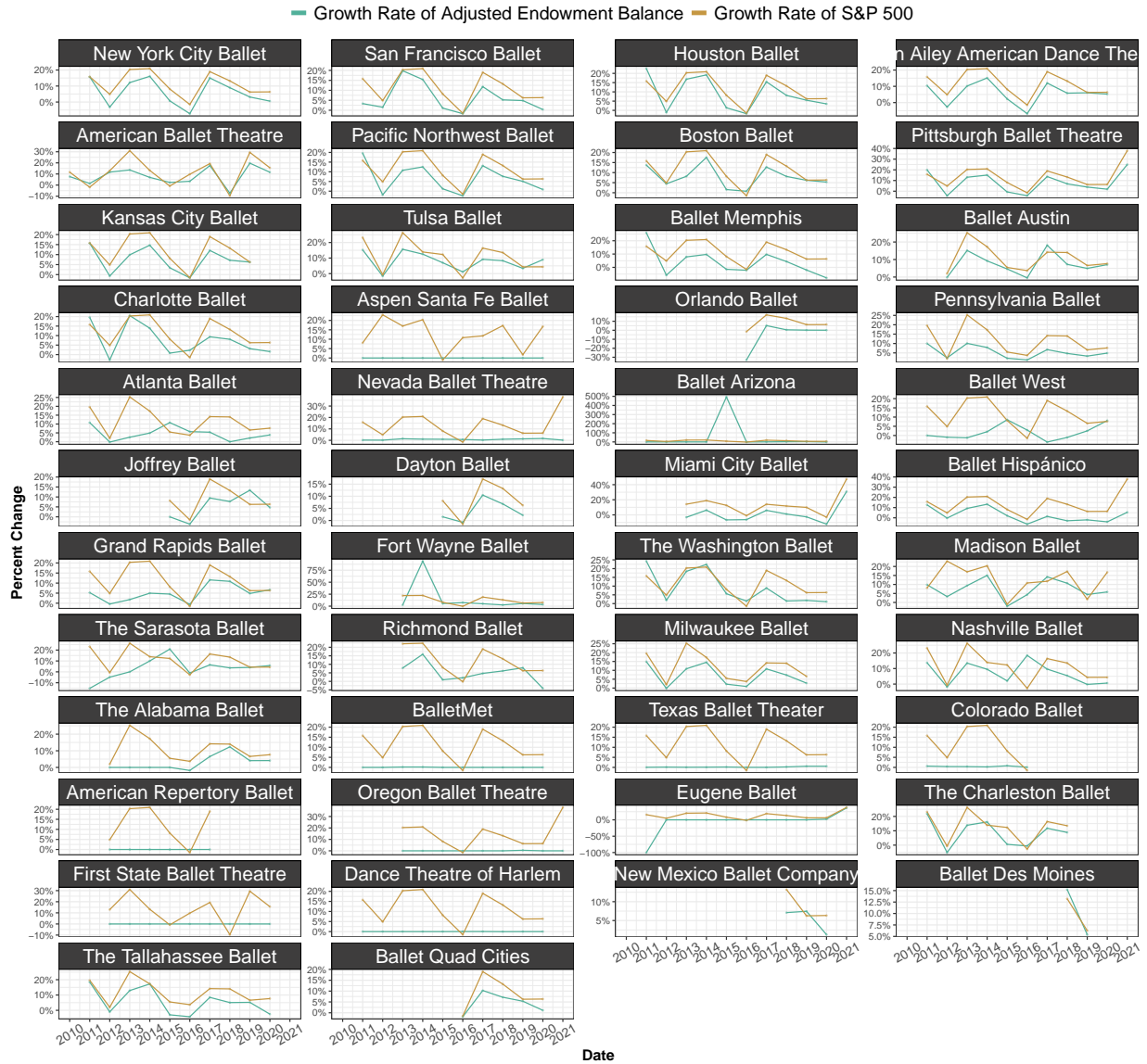


Figure 1: Annual growth rate of a company's endowment when adjusting for contributions and withdrawals, compared to the annual growth SP 500 for the corresponding time period.

Compound Growth Rate

Letting t denote the number of years considered,

$$\text{Compound Annual Growth Rate} = \left(\frac{\text{End Value}}{\text{Beginning Value}} \right)^{\frac{1}{t}} - 1$$

To adjust for contributions and expenditures, we define the Compound Annual Growth Rate as

$$\left(\frac{\text{End Value} + \sum_{i=1}^{t-1} \text{Other Expenditures} + \sum_{i=1}^{t-1} \text{Grants and Scholarships} + \sum_{i=1}^{t-1} \text{Administrative Expenses} - \sum_{i=1}^{t-1} \text{Contributions}}{\text{Beginning Value}} \right)$$

We visualize the compound growth rates for all companies in Figure 2. Notably, San Francisco Ballet, Joffrey Ballet, and

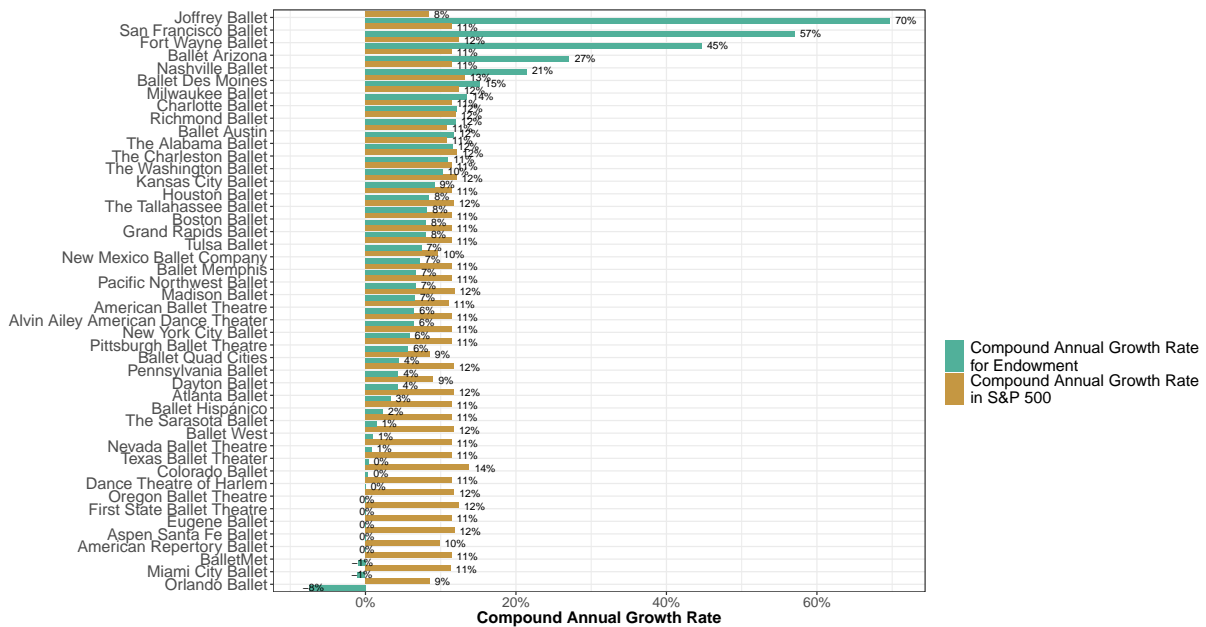


Figure 2: Compound annual growth rates for all organizations compared to the compound annual growth rate for the S&P 500.

We see immediately in Figure 2 that some companies have a compound growth rate is indistinguishable from zero. This includes:

- Oregon Ballet: reported no investment earnings/losses for any year
- Harlem Ballet: investment earnings/gains were extremely small (± 13 dollars)
- First State Ballet Theatre: reported no investment earnings/losses for any year
- Eugene Ballet: only reported investment earnings/losses for 2020 and 2021
- American Repertory Ballet: reported no investment earnings/losses for any year

We see in 1 that each of these companies annual growth rates are essentially zero when accounting for contributions and withdrawals.

Table 1: Organizations with 100% of their Endowments in One Category for All Years on File

Endowment Type	Organization Name	Number of Years on File
Board designated or quasi-endowment		
Board designated or quasi-endowment	Pittsburgh Ballet Theatre	7
Board designated or quasi-endowment	Dance Theatre of Harlem, The Tallahassee Ballet	6
Board designated or quasi-endowment	Ballet Quad Cities	2
Board designated or quasi-endowment	Canyon Concert Ballet	1
Permanent endowment		
Permanent endowment	Pittsburgh Ballet Theatre	7
Permanent endowment	Dance Theatre of Harlem, Madison Ballet	6
Permanent endowment	BalletMet	5
Permanent endowment	Aspen Santa Fe Ballet, Ballet West	4
Permanent endowment	New Mexico Ballet Company	3
Permanent endowment	Oregon Ballet Theatre	2
Permanent endowment	American Repertory Ballet, Colorado Ballet, Orlando Ballet	1
Temporarily restricted endowment		
Temporarily restricted endowment	Pittsburgh Ballet Theatre	7
Temporarily restricted endowment	Dance Theatre of Harlem, First State Ballet Theatre	6
Temporarily restricted endowment	Ballet Des Moines	2

Where Endowments are Held

Types of Endowments by Organization

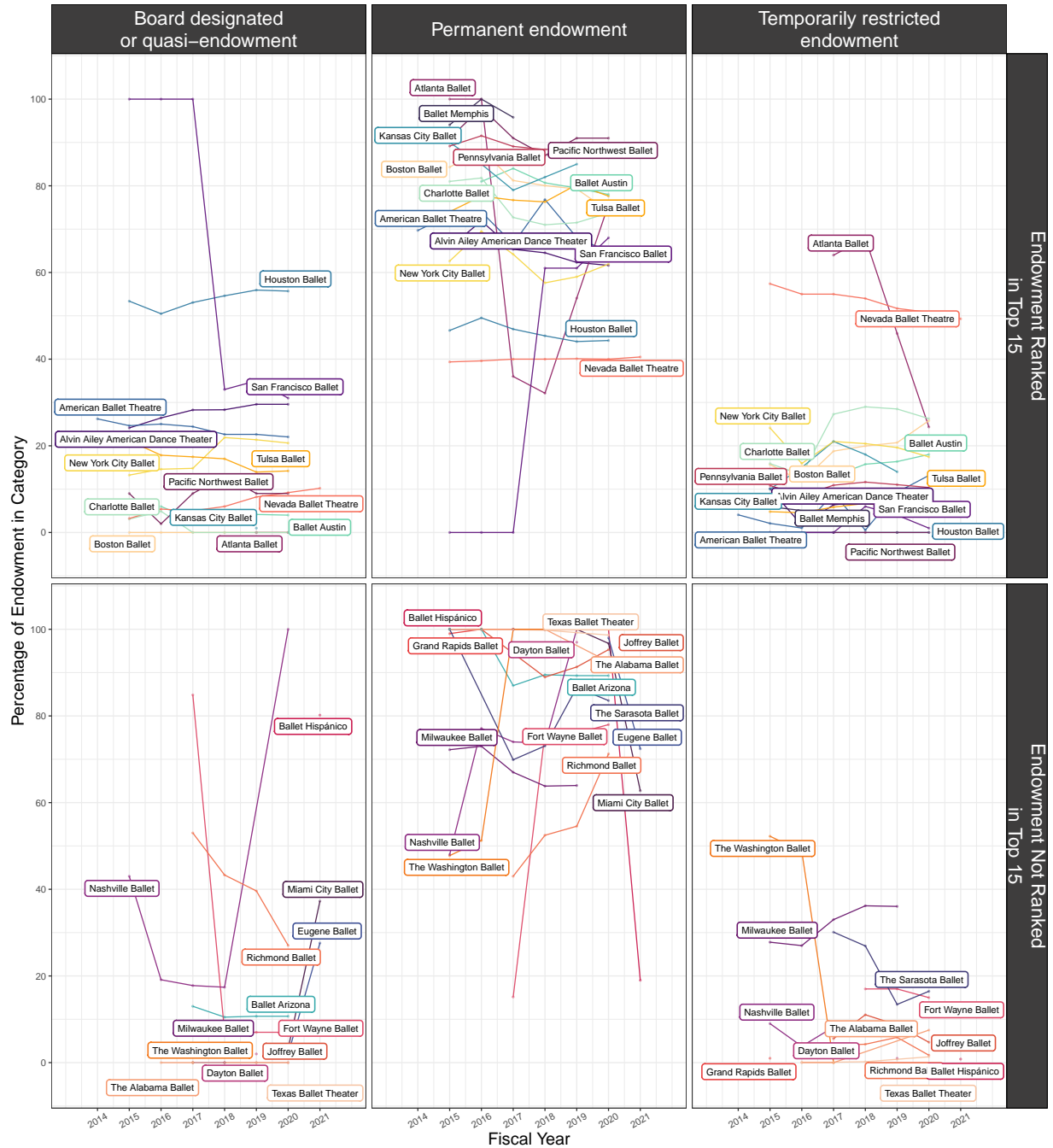


Figure 3: The percentage of endowments held in temporarily restricted endowment, permanent endowment, or board designated or quasi-endowment. The first row of plots corresponds to the percentages for companies ranked in the top 15 by beginning of year balance, and the second row includes all remaining companies.

Rankings

Beginning of Year Balance versus Contributions

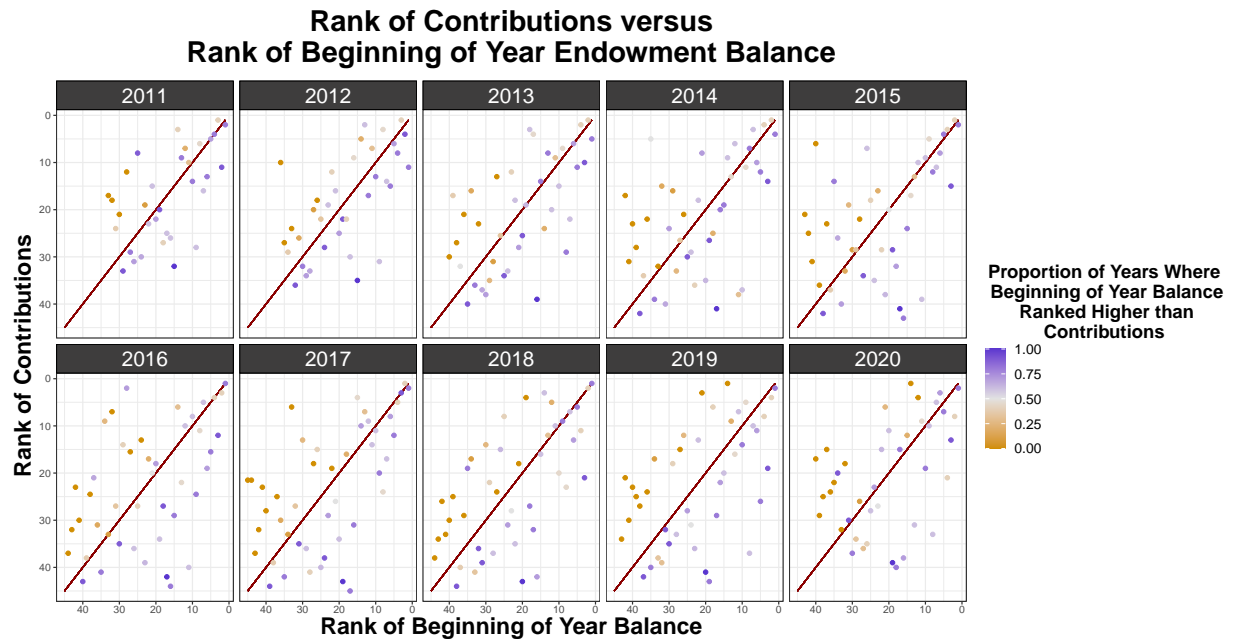


Figure 4: Comparing the rankings of beginning of year balance of the endowment to the ranking of contributions recieved.

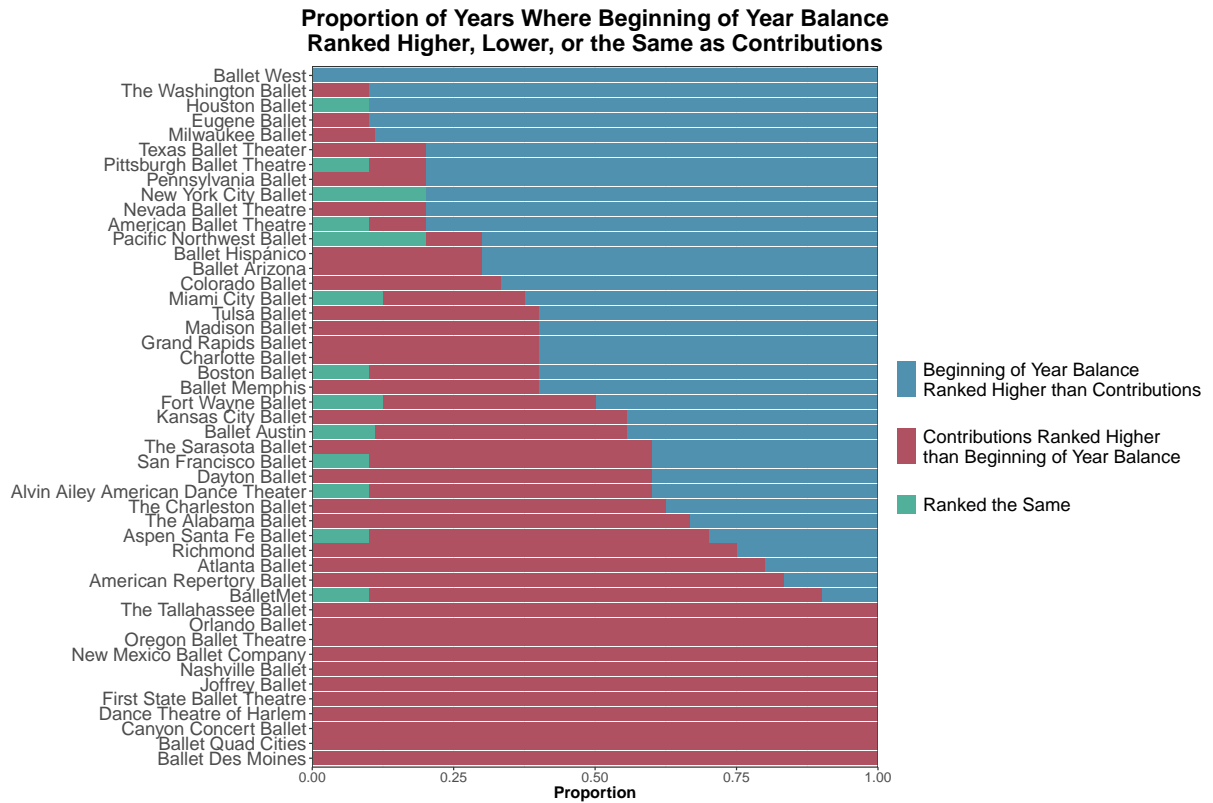
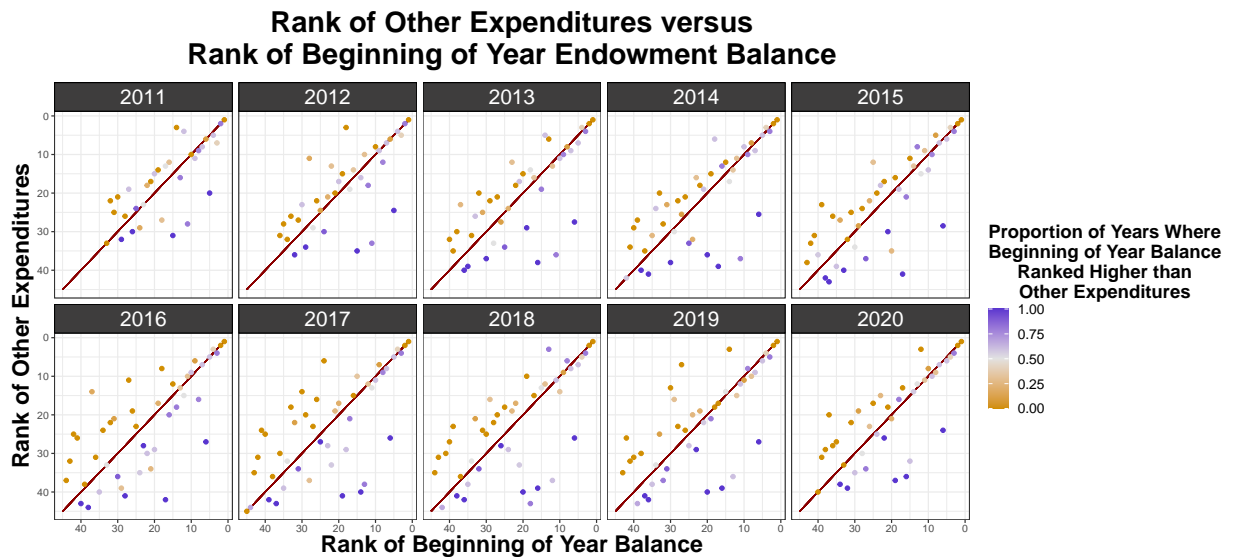


Figure 5: Comparing the Proportion of years where a company ranked higher, lower, or the same in beginning of year balance compared to contributions received.

Beginning of Year Balance versus Other Expenditures



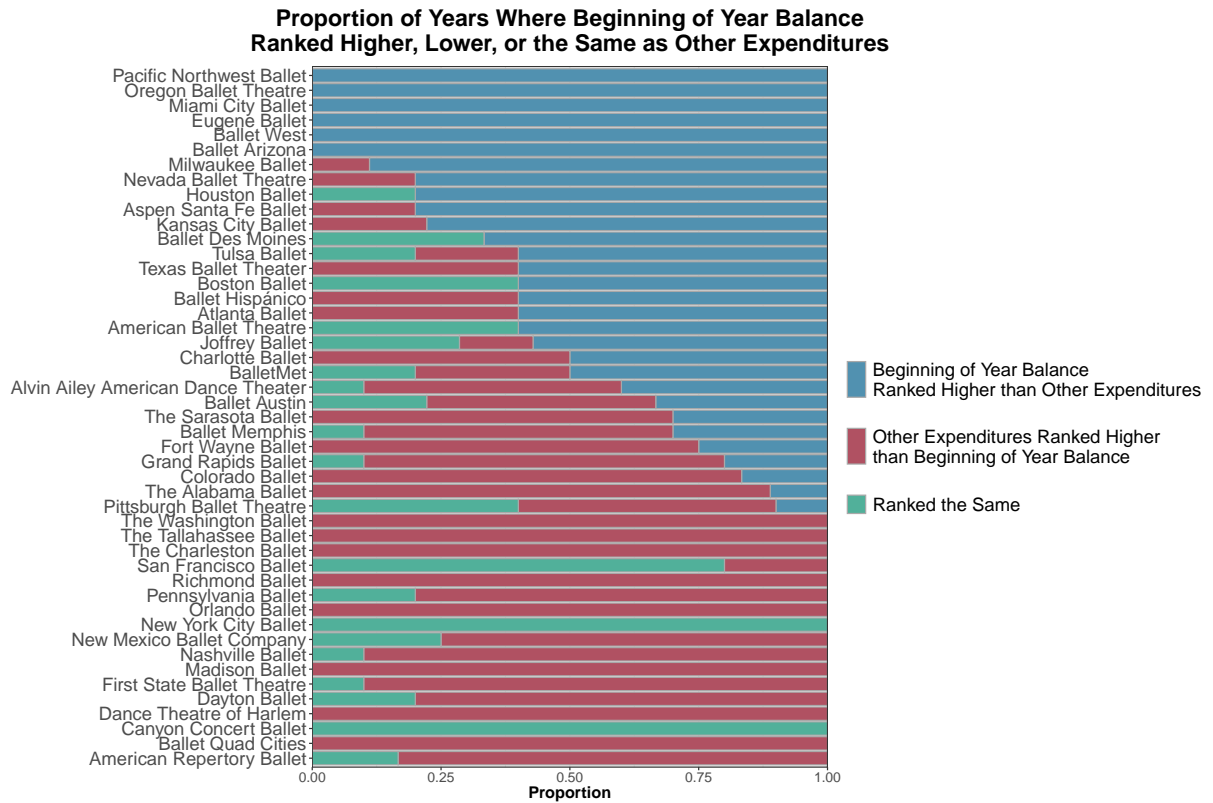


Figure 6: Comparing the proportion of years where a company ranked higher, lower, or the same in beginning of year balance compared to expenditures.

How ranks change over time

Ranking of Endowment Beginning of Year Balance

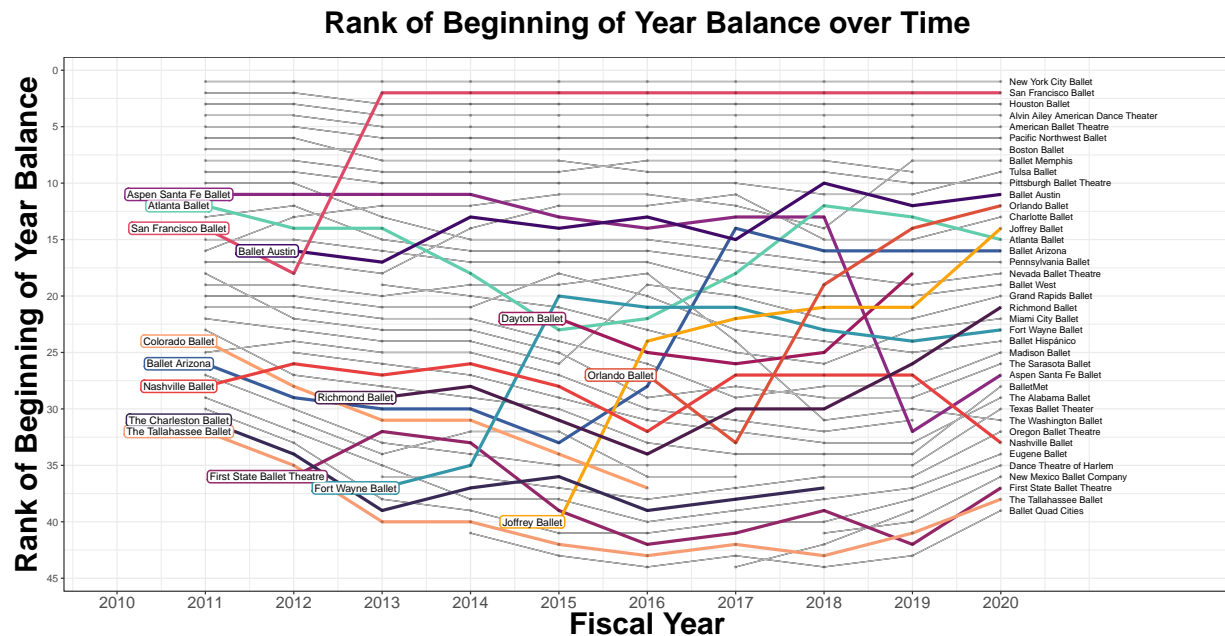


Figure 7: Rank of the endowment beginning of year balance over time. The 15 companies with the most variability in ranking, defined as the mean difference in rankings between fiscal years, are shown in color. Names of all companies are on the right.

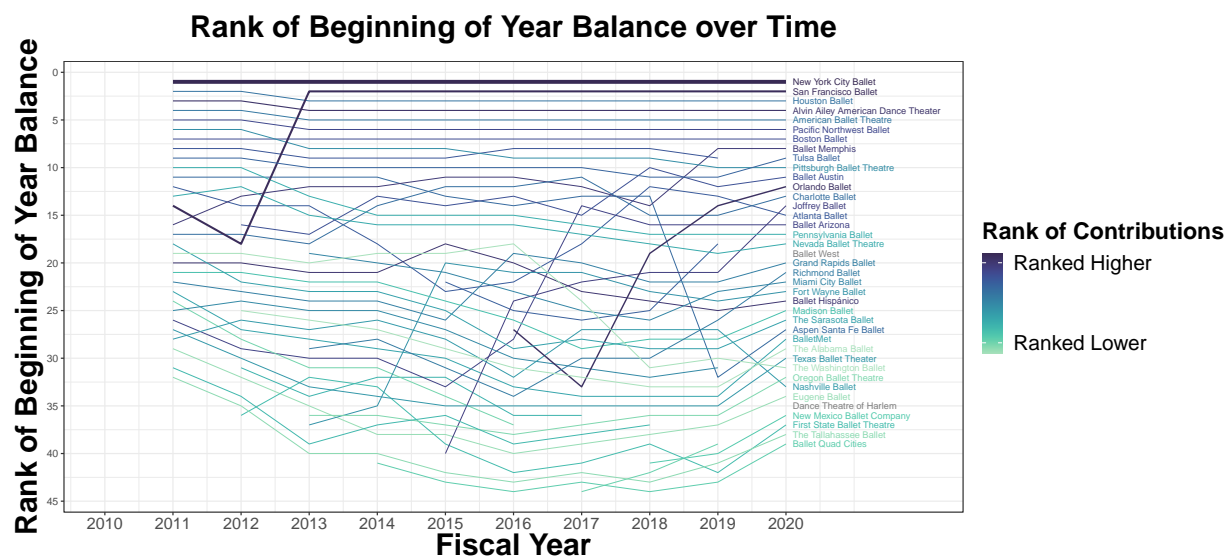


Figure 8: Rank of the endowment beginning of year balance over time, where the color indicates the ranking of the mean contributions received over all years on file for the company.

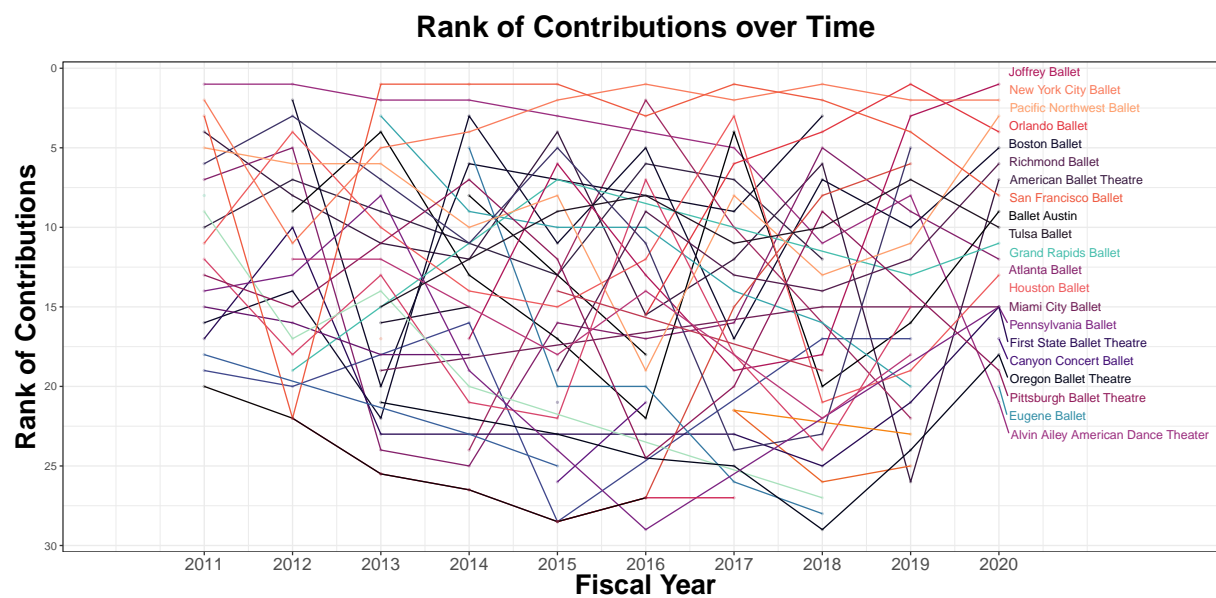


Figure 9: The rankings of contributions over time, by organization.