Endowment Tme Series for Report

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De	efinitions:	
	OtherExpendituresAmt: Other expenditures for facilities and programs	
##	<pre># 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></dbl></dbl></dbl></dbl></chr></date></chr></pre>	

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

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

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

- Growth Rate of Adjusted Endowment Balance - Growth Rate of S&P 500



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,

Compound Annual Growth Rate
$$=\left(rac{ ext{End Value}}{ ext{Beginning Value}}
ight)^{rac{1}{t}}-1$$

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

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

$$\text{Beginning Value}$$

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

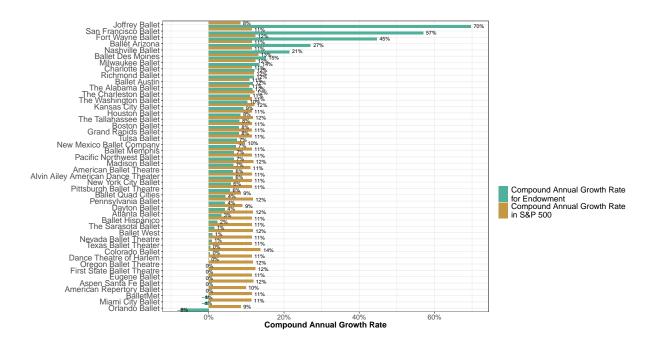


Figure 2: Compound annual growth rates for all organizations compared to the compound annual growth rate for the S&P 500.

We see immediately in Figure 2that 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,	6		
	The Tallahassee Ballet			
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,	6		
	Madison Ballet			
Permanent endowment	BalletMet	5		
Permanent endowment	Aspen Santa Fe Ballet,	4		
	Ballet West			
Permanent endowment	New Mexico Ballet	3		
	Company			
Permanent endowment	Oregon Ballet Theatre	2		
Permanent endowment	American Repertory	1		
	Ballet, Colorado Ballet,			
	Orlando Ballet			
Temporarily restricted endowment				
Temporarily restricted endowment	Pittsburgh Ballet Theatre	7		
Temporarily restricted endowment	Dance Theatre of Harlem,	6		
	First State Ballet Theatre			
Temporarily restricted endowment	Ballet Des Moines	2		

Board designated Temporarily restricted Permanent endowment or quasi-endowment endowment Atlanta Ballet Ballet Memphis Pennsylvania Ballet Pacific Northwest Ballet Ballet Austin Charlotte Ballet Tulsa Ballet American Ballet Theatre Alvin Ailey Amer Endowment Ranked Atlanta Ballet New York City Ballet Houston Ballet Nevada Ballet Theatre San Francisco Ballet New York City Ballet Percentage of Endowment in Category Ballet Memphis San Francisco Ballet Kansas City Ballet Houston Ballet Atlanta Ballet Joffrey Ballet Grand Rapids Ballet The Alabama Ballet The Sarasota Ballet Ballet Hispánico ayne Ballet Eugene Ballet Endowment Not Ranked Richmond Ballet Miami City Ballet Nashville Ballet The Washington Ballet The Washington Ballet Nashville Ballet Eugene Ballet Richmond Ballet Nashville Ballet Fort Wayne Ballet Grand Rapids Ballet chmond Bal Ballet Hispánico 2017 Fiscal Year

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

Rank of Beginning of Year Endowment Balance 2011 2012 2013 2014 2015 Proportion of Years Where Beginning of Year Balance Ranked Higher than Contributions 1.00 0.75 0.50 0.25 0.00

Rank of Contributions versus

Rank of Beginning of Year Balance

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

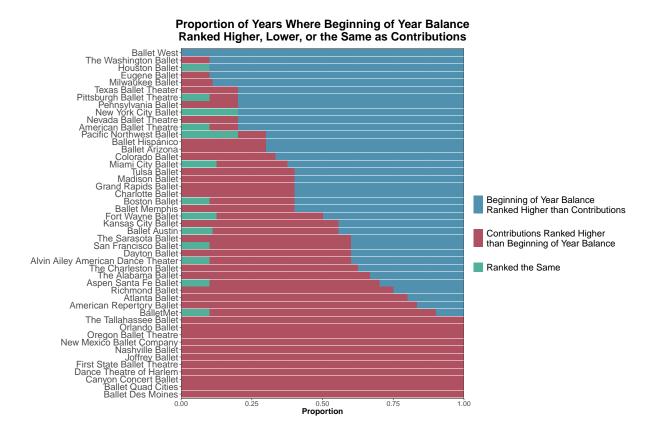
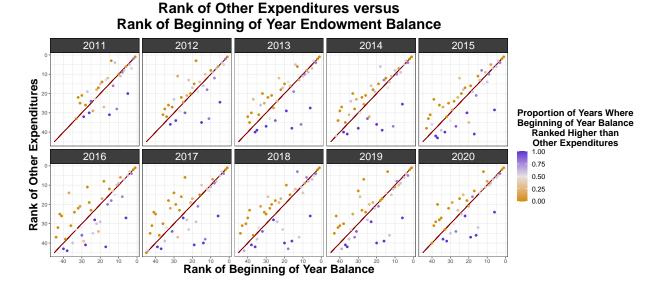


Figure 5: Comparing the Proportion of years where a company ranked higher, lower, or the same in beginning of year balance compared to contributions received.

Beginning of Year Balance versus Other Expenditures



Proportion of Years Where Beginning of Year Balance Projection of the state of the Ranked Higher, Lower, or the Same as Other Expenditures Beginning of Year Balance Ranked Higher than Other Expenditures Other Expenditures Ranked Higher than Beginning of Year Balance Ranked the Same

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

0.50 Proportion

How ranks change over time

Ranking of Endowment Beginning of Year Balance

Rank of Beginning of Year Balance over Time New York Cty Batel See Francisco Balet Heating Balet He

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.

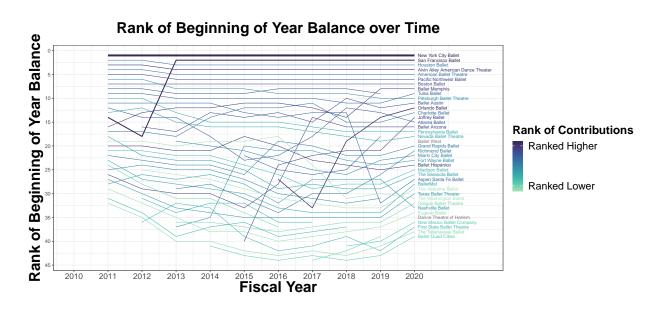


Figure 8: Rank of the endowment beginning of year balance over time, where the color indicates the ranking of the mean contributions received over all years on file for the company.

Rank of Contributions over Time

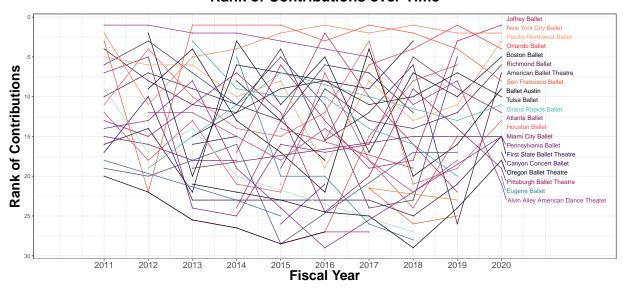


Figure 9: The rankings of contributions over time, by organization.