

Analysis of Dance Data Company Endowments, Assets, and Labor in the United States

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² 1. Executive Summary:

³ In an effort to advance equity in dance, this report examines existing financial structures and
⁴ incentives that shape dance companies' fiscal viability. This report was produced in conjunction with a
⁵ team of students from the Smith College Statistical & Data Sciences Capstone, hereafter referred to as
⁶ the capstone team.

⁷ The capstone team reviewed publicly-available tax forms from 169 dance companies in the United
⁸ States for information on their endowments over time, use of labor, compensation, investments, and
⁹ other assets. When comparing against the S&P 500 as a measure of the state of the stock market, the
¹⁰ capstone team found that the trends in companies' endowments closely follow those in the stock
¹¹ market in general, but some companies do [diverge from these general trends](#). Notably, some companies
¹² do not invest their endowments for most years on file (e.g., Dance Theatre of Harlem, Eugene Ballet,
¹³ or the American Repertory Ballet).

¹⁴ Form 990 requires companies to estimate the company's total number of volunteers that did any
¹⁵ amount of volunteer work during the fiscal year. Unpaid labor is especially important to investigate
¹⁶ because the Bureau of Labor Statistics indicates that 76.6% of the workforce is female, and the wage gap
¹⁷ is especially apparent in dance [1]. In terms of labor usage, the West region uses the most combined
¹⁸ employee and volunteer labor, but the South region has the highest percentage of companies with
¹⁹ more volunteers than employees. The Team also determined that the fraction of compensation going
²⁰ to top executives is generally consistent from 2014 - 2020, with a median near 10%. There is more
²¹ variability in the fraction paid to top executives for smaller companies. These trends in executive
²² compensation will be important to track as filings are released for the pandemic years.

²³ The value of this research is in its ability to impact future data advocacy in regard to dance
²⁴ companies in the United States. As well, this project provides a framework for the analysis of Form
²⁵ 990 data, including publicly available code, to bring more transparency to the financial side of the
²⁶ dance industry. Of note, a major limitation of this report is that it relies on publicly-available, online
²⁷ tax documents which may contain errors or false reporting. Additionally, the IRS is currently behind
²⁸ in posting recent tax documents as well as updated amendments, so few filings are available for the
²⁹ fiscal year 2021, and no filings beyond 2021 are available. Dance Data Project® does not seek to make
³⁰ inferences based on the data presented here; rather, Dance Data Project (DDP®) records and reports
³¹ the data as it is reported on the IRS website.

³² **2. Introduction**

³³ *2.1. Inequality in the Arts*

³⁴ Discrepancies in how nonprofits report financial data can impact those already at a social and
³⁵ economic disadvantage, such as women and girls [2]. The study of women and gender has consistently
³⁶ drawn focus to the inequitable distribution of wealth between men and women. One of the most
³⁷ heavily researched phenomena regarding wealth inequality is the wage gap between men and women
³⁸ that persists even when they have the same education, experience, skills, and job titles [1]. Contrary
³⁹ to the popular opinion that the gender wage gap is narrowing, Weichselbaumer & Winter-Ebmer
⁴⁰ [3] demonstrated that financial returns in relation to skills and education are increasingly higher
⁴¹ for men than for women. Even less research has been done on the wage gap for transgender or
⁴² non-binary individuals. Additionally, compounding factors such as lack of corporate oversight and
⁴³ socially-imposed gender roles further entrench the gender pay gap into everyday life [4]. Further
⁴⁴ understanding the wage gap in female-dominated fields, such as in dance, can inform future solutions
⁴⁵ to lessen the inequitable distribution of wealth between men and women.

⁴⁶ The wage gap has long been exacerbated by disproportionate pay in the arts, and especially
⁴⁷ dance, in part because the vast majority of entry-level dancers are women and girls [1]. Additionally,
⁴⁸ unpaid labor in dance is much more commonplace than in other industries [4]. Because dance is a
⁴⁹ performing art, many companies that employ dancers are entitled to government subsidies and tax
⁵⁰ breaks; however, there are no current regulations to ensure that this governmental assistance is used
⁵¹ to lessen unpaid and underpaid labor by dancers [2]. Unrestricted financial assistance may worsen
⁵² existing inequalities in the field of dance by enabling company owners and executives to profit while
⁵³ retaining unpaid and underpaid labor, so further understanding how this assistance is used is essential
⁵⁴ in combating the problem.

⁵⁵ *2.2. The Dance Data Project*

⁵⁶ The capstone team completed this project in collaboration with our project sponsor, the Dance
⁵⁷ Data Project (also known as DDP®). The Dance Data Project is a non-profit organization dedicated
⁵⁸ to equality in the arts. Founded in 2015 by philanthropist Elizabeth Yntema, DDP® uses data and
⁵⁹ research to promote transparency, accountability, and action toward gender equality in dance.

⁶⁰ DDP® collects, analyzes, and presents data to outline the lack of leadership opportunities for
⁶¹ female directors, choreographers, composers, set, costume, lighting designers, and back-of-house
⁶² positions in dance. The organization seeks to create a world where all dancers, regardless of gender,
⁶³ race, ethnicity, or socioeconomic status, have equal access to opportunities and resources in the dance
⁶⁴ world. The organization also advocates for removing barriers to female employment and advancement
⁶⁵ in this industry, such as lack of parental and elder leave, daycare system, and protocol for sexual
⁶⁶ harassment by presenting their findings on television news such as [NBC/NOW](#) and publishing articles
⁶⁷ in magazines such as [New York Times](#), [Forbes](#), [Fortune](#), and [Dance Magazine](#). Through its data-driven
⁶⁸ research, advocacy, and education efforts, DDP® works to create a more equitable and inclusive dance
⁶⁹ community where all individuals have the opportunity to pursue their passion for dance.

⁷⁰ *2.3. Scope*

⁷¹ As a matter of transparency and public accountability, tax documents filed by nonprofit
⁷² corporations in the United States have always theoretically been available to the public, but it wasn't
⁷³ until the development of electronic tax filing systems through the IRS that these tax documents became
⁷⁴ easily accessible for analysis. Online tax filing systems have been available since the late 1990s, but the
⁷⁵ [2019 Taxpayer First Act](#) required all nonprofits to electronically file their tax returns [5]. This legislation
⁷⁶ changed the landscape for public accessibility of the financial information of nonprofits as well as
⁷⁷ presented critical research opportunities for data activism. Incorrect reporting, inequitable wealth

78 distribution, and tax fraud by nonprofit organizations have always happened, but mandatory online
 79 reporting allows data analysts to identify suspected cases and draw attention to them [5].

80 *2.4. The Dance Economy & IRS Form 990s*

81 In the United States, nonprofit organizations file either a Form 900 or a Form 990 EZ with the
 82 IRS each year. These documents include but are not limited to information on the organization's
 83 geographic location, number of employees and volunteers, operating costs, income, compensation,
 84 and net assets. Additionally, some nonprofits are required to fill out Schedule D forms alongside their
 85 990 filings if they have certain additional assets (i.e. endowment funds, real estate, investment income).
 86 Each organization reports these values for their own fiscal years. It is important to understand that
 87 companies have different dates for their fiscal years, so one company may report a fiscal year ending
 88 in February and another may report their fiscal year ending in September. This causes significant
 89 variability when analyzing 990 forms from different companies [5].

90 Form 990 data is more accessible than ever now and the government has required nonprofit
 91 organizations to electronically file them. Yet, much of the public does not understand the terms on
 92 publicly available tax forms, nor does the average person possess the skills to readily analyze hundreds
 93 of tax forms every year [6]. Thus, data scientists can play a very important role in analyzing these
 94 forms filed by dance companies and presenting findings to the public. Further elucidating the financial
 95 practices of nonprofit organizations 1) in the field of dance, 2) in pandemic-related economic shifts and
 96 3) through geographical analysis can help inform proper solutions to a wide range of issues, including
 97 difference in cost of living and performance season in different regions and the different features in
 98 regional gender pay gap in dance.

99 *2.5. Current Study*

100 This project provides a preliminary analysis of publicly available financial information on dance
 101 companies in the United States. Results were collected and shared with Dance Data Project for
 102 any publications or future analyses that they perform. Because little previously publicly available
 103 research has been published regarding the financial practices of dance companies in the United States,
 104 our exploratory approach examined broad research areas regarding how dance companies manage
 105 endowments, employment, and properties.

106 The bulk of this report consists of examining how companies' financial resources (particularly
 107 endowments) behave over time, in comparison to one another, and in comparison to the S&P 500. The
 108 use of volunteer labor alongside the use of paid employment labor and how geographical location
 109 impacts the use of each type of labor is also investigated.

110 The data source for this project is a collection of IRS Form 990 and IRS Form 990 EZ from dance
 111 companies in the United States; as a result, the dataset utilized for this project only contained IRS
 112 Form 990s which have been accepted, processed, and published online by the IRS. These publicly
 113 available tax documents are required annual filings for nonprofits¹ and include information such as
 114 the number of employees and volunteers, compensation to employees, geographical location, and
 115 annual revenue. As part of Form 990s, companies with certain financial assets must report Schedule
 116 D forms, which contain data on endowment funds as well as building values and other assets. The
 117 analysis is primarily presented based on Schedule D of Form 990. This analysis seeks to capture trends
 118 in how these companies have managed their assets and endowments, primarily in the time span of
 119 2014 to 2020, with the goal of bringing transparency to the financial side of the dance industry.

¹ Most major dance companies are nonprofits.

¹²⁰ **3. Ethics Statement**

¹²¹ This project included signing a non-disclosure agreement with Dance Data Project in which each
¹²² group member agreed to keep specific collections of data produced by DDP® confidential.
¹²³ In these analyses, the team assumed the values from the most recent filings were correct. Amended
¹²⁴ filings were used when available; however, it is possible that companies have made amendments that
¹²⁵ have not yet been released by the IRS. As of January 2023, written returns are no longer accepted.
¹²⁶ The social harm that could occur from this assumption is that dance companies who accidentally
¹²⁷ misreport their tax documents may be identified in the following analyses as violating ethical or
¹²⁸ financial norms. In order to prevent this, the team and DDP® collaborated to reach out to companies
¹²⁹ to ask for clarification of the below findings before potentially publishing their name.

¹³⁰ Finally, all of the capstone team have training in data science. Because none of the Team members
¹³¹ have a background in dance, the Team members cannot provide personal expertise in analyzing this
¹³² data. Additionally, the capstone team all identifies as female and has limited racial diversity with no
¹³³ input from the Black community. The standpoints of dancers, men, and people of diverse backgrounds
¹³⁴ in data analyses may offer a more comprehensive understanding of the context behind the utilized
¹³⁵ dataset. In order to reduce bias (although it was not possible to change the team's social identities), the
¹³⁶ capstone team spoke with the Dance Data Project about how to approach this data that may impact
¹³⁷ other social groups.

¹³⁸ **4. Detailed Methodology**

¹³⁹ *4.1. Data Acquisition*

¹⁴⁰ Data files were gathered by Andrew Hoekstra, data consultant from DDP®, prior to February 8th,
¹⁴¹ 2022 from publicly available IRS APIs. Form 990s were downloaded as XMLs. The sample contained
¹⁴² 169 US dance companies in total, with Form 990s submitted between 2015 and 2022, thus representing
¹⁴³ fiscal years 2014 through 2021; however, as more recent filings are currently unavailable through the
¹⁴⁴ IRS, not all companies who filed in 2022 are represented in fiscal year 2021 within this analysis. For
¹⁴⁵ Schedule D in particular, companies are required to report endowment totals up to 4 fiscal years prior,
¹⁴⁶ thus the utilized endowment data spans 2010 to 2021.

¹⁴⁷ *4.2. Initial Wrangling & Filtering*

¹⁴⁸ Form 990 can be completed in three different formats: Form 990, Form 900-EZ, and Form 990-T.
¹⁴⁹ All Form 990-Ts were excluded because these forms do not contain relevant information on variables
¹⁵⁰ considered in the following analyses. Additionally, when a company amended a filing, and hence had
¹⁵¹ multiple filings corresponding to a single fiscal year, the amended filing was used.

¹⁵² *4.3. Quality Assurance*

¹⁵³ Because in a single filing, a company reports years for several endowment variables not only for
¹⁵⁴ the current year but for the prior year, two years back, three years back, and four years back, filings
¹⁵⁵ across years can be cross-referenced to ensure they are concordant.

¹⁵⁶ For example, when a company reports in their 2020 filing the beginning of year endowment
¹⁵⁷ balance for years 2016 through 2020, the value they reported for 2016 in the 2020 filing (in the four years
¹⁵⁸ back column) can be cross-referenced with what they reported in 2016 (in the current year column)
¹⁵⁹ to ensure reporting consistency. Reporting was highly consistent across the companies considered;
¹⁶⁰ however, there were some notable discrepancies, particularly in earlier years. When these discrepancies
¹⁶¹ were identified, the capstone team reached out to the companies to clarify which values were correct
¹⁶² (Table 1). The team received prompt responses from BalletMet and Pittsburgh Ballet, who confirmed
¹⁶³ the more recently reported values were correct.

164 Because discrepancies were typically in earlier years, and our communications with the companies
165 who did respond noted their most recently reported values were correct, in our analyses the most
166 recent data available was used. For example, values for 2016-2020 were taken from the 2020 filing
167 instead of taking the current year's values for the filing from each year separately.

168 Another result of this approach is that it is possible to look back through the fiscal year 2010 in
169 some cases since although filings only go back to 2014, each filing has data going back four years.

170 **5. Nota Bene regarding Aspen Santa Fe Ballet**

171 There are a couple of important notes to make about Aspen Santa Fe as we interpret the figures in
172 this report.

173 For one, Aspen Santa Fe transferred a large proportion of its endowment to the entity [Aspen](#)
174 [Santa Fe Ballet Endowment Inc](#) (EIN 821009713) in 2018. This must be considered when interpreting
175 the changes in endowment over time. Aspen Santa Fe Ballet shuttered its professional company in
176 March 2020.

177 According to their executive director and accountant, there were issues with Aspen Santa Fe
178 Ballet's filing for the fiscal year 2020, which have been amended. However, this amended filing has
179 not yet been released by the IRS, and thus it cannot be included in this analysis.

Table 1. Companies Reached Out to Regarding Discrepancies

Company	Discrepancy
Aspen Santa Fe	The current year value for other expenditures for fiscal year 2018 is \$6,906,449, but in 2019 the prior year value for other expenditures is \$6,356,449 and, in accordance with the 2019 report, in 2020 the two years back value is \$6,356,449. DDP has corresponded with Aspen Santa Fe Ballet regarding this discrepancy; however, the amended return is not available through the IRS at this point in time.
BalletMet	In 2015, the current year beginning of year balance is reported as \$262,509, but then in 2016, the prior year beginning year balance is said to be \$235,225; future year filings are in accordance with the \$235,225 value.
Ballet Arizona	In the 2016 and 2017 filings, the beginning of year balance corresponding to fiscal years 2016 and 2017 was reported as \$101,399. However, in the 2018 filing, the value for 2016 was reported to be \$601,399, and the value corresponding to 2017 was reported as \$4,126,424.
The Alabama Ballet	In the filings for fiscal years 2016, 2017, and 2018, the beginning and end of year balances are marked as \$250,000 for all included years. However, in 2019, the value reported for the prior year (2018) is \$477,040, and in the filing for the fiscal year 2020, the values are not concordant with the \$250,000 value.
Fort Wayne Ballet	In the 2017 filing, the beginning-of-year balance is \$1,264,981. However, in the 2018 filing, the beginning of year balance for the prior year is reported as \$1,291,109 (second image below, and then the 2019 and 2020 filings both report the value corresponding to 2017 as \$1,413,780. There are similar discrepancies for the end of year balances.
Joffrey Ballet	In the filing for the 2015 fiscal year, the value corresponding to 2015 is \$1,443,297, and the value corresponding to the 2014 filing is recorded as \$170,360. However, in 2016, the value corresponding to 2015 is reported as \$1,136,139, and the value for 2014 is reported as \$35,600. Additionally, the reported contributions amount (under Part V: endowment funds) for the filing on fiscal year 2016 is \$236,579, but in 2017 the contributions amount reported for the prior year (2016) is \$278,281; the value of \$278,281 is reported in following years.
The San Francisco Ballet	In San the tax filings corresponding to fiscal year 2015, the beginning of year balance for 2013, 2014, and 2015 are reported as \$174. These values are in accordance with the fiscal year 2016 filing, and the beginning of year balance for 2016 is also reported as \$174. However, in the filing for the 2017 fiscal year, the reported beginning of year balance for the prior year (2016) was \$107,033,575, for two years back (2015) it was 105,867,946, for three years back (2014) it was 92,513,161, and for four years back (2013) it was \$79,137,681.
Pittsburgh Ballet Theatre	In the filing for the fiscal year 2018, the current year net investment earnings/losses/gains is \$475,508, but in the filing for the fiscal year 2019, the value \$556,273 is reported for the prior year (2018), and in the 2020 filing again, the value \$556,273 for 2 years back (2018). Also, in the filing corresponding to the fiscal year 2020, the reported investment earnings/losses/gains is \$147,166, but in the 2021 filing the prior year value is reported as \$172,248.

¹⁸⁰ 5.1. Standard Definitions

¹⁸¹ Below a set of standard definitions on fundamental concepts used throughout these analyses is
¹⁸² provided.

Term	Definition
Endowment	Form 990 uses the definition of the endowment (and types of endowments) from the Financial Accounting Standards Board , which defines an endowment fund as “An established fund of cash, securities, or other assets to provide income for the maintenance of a not-for-profit entity (NFP). The use of the assets of the fund may be with or without donor-imposed restrictions.”
Rank	When ranking by a numeric variable, defined as the rank of 1 to be the highest rank among all companies, with subsequent ranks indicating a lower rank relative to other companies. When two companies had identical rankings, their ranking was taken as the average was taken. For example, the ranking of (1,2,3) would be (1,2.5,2.5). In this work, the precise values of the rankings are less relevant than their orderings.
Percent Change	The percent change is $\frac{\text{End Value} - \text{Beginning Value}}{\text{Beginning Value}} \times 100$.
S&P 500	The Standard and Poor’s 500 Index is a standard index used as a benchmark to describe the behavior of the stock market overall. The index includes 500 top publicly traded companies and is weighted by the market value of stocks currently held by stakeholders, where companies with higher market value receive a higher weight.
Compound Annual Growth Rate	The compound growth rate (CAGR) describes a company’s average growth over multiple years. It is useful as a smoothed metric to look over growth over a set of years and compare companies in the same time period. For a time period of t years, the annual growth rate is computed as
	$\text{Compound Annual Growth Rate} = \left(\frac{\text{End Value}}{\text{Beginning Value}} \right)^{\frac{1}{\text{End Year} - \text{Beginning Year}}} - 1.$

¹⁸³ **6. Findings**

¹⁸⁴ *6.1. Endowments*

¹⁸⁵ **Endowments** are donated funds to nonprofit organizations which are invested. Endowments are
¹⁸⁶ typically designed to maintain initial donations (principal funds); the investment income produced by
¹⁸⁷ the invested donation can be utilized for specific purposes. Depending on endowment management
¹⁸⁸ and policies, some organizations can remove a certain amount of principal assets from their endowment
¹⁸⁹ per year.

¹⁹⁰ **6.1.1. Key Takeaways**

- ¹⁹¹ • The majority of dance companies hold their endowment in the permanent endowment category,
¹⁹² and few companies have dramatic changes in where they hold their endowments over time
¹⁹³ ([1](#)). Exceptions, that is, companies where the fraction held in any endowment category varies
¹⁹⁴ substantially over time, include Fort Wayne Ballet, San Francisco Ballet, Nashville Ballet, Atlanta
¹⁹⁵ Ballet, and the Washington Ballet ([Figure 2](#)).
- ¹⁹⁶ • Forty-seven companies report an endowment at least once ([Table 4](#)).
- ¹⁹⁷ • Seven companies are consistently ranked the highest by endowment size: New York City Ballet,
¹⁹⁸ San Francisco Ballet, Houston Ballet, Alvin Ailey American Dance Theater, American Ballet
¹⁹⁹ Theatre, Pacific Northwest Ballet, and Boston Ballet. There are no changes in the rankings among
²⁰⁰ these top 7 from 2013 to 2020, while companies that have mid-ranked or smaller endowment
²⁰¹ sizes change rankings more frequently ([Figure 4](#)).
- ²⁰² • NOT TO BE PUBLISHED: Companies such as The Sarasota Ballet, Atlanta Ballet, and others
²⁰³ miscalculate their end-of-year-balance.
- ²⁰⁴ • Some endowments (e.g. Atlanta Ballet, Orlando Ballet, San Francisco Ballet) severely drop in
²⁰⁵ value within a fiscal year ([Figure 14](#)).
- ²⁰⁶ • Other endowments (e.g. Joffrey Ballet) more than doubled within a fiscal year. ([Figure 15](#)).
- ²⁰⁷ • Consistency of growth or shrinkage of endowment is not determined by organization size, as
²⁰⁸ measured through most recent endowment balance and employee number ([Figures 16 and 17](#)).
- ²⁰⁹ • The annual growth of companies' endowments regularly dips below 5% ([Figure 19](#)). Some
²¹⁰ companies invest a minimal portion of their endowment or do not invest their endowment at all.
²¹¹ For companies that do invest, the annual growth rate closely tracks that of the S&P 500 for the
²¹² companies with the largest endowments, but the annual growth rate for companies with smaller
²¹³ endowments often diverges from trends in the S&P 500.

²²⁰ **6.1.2. Types of Endowments**

²²¹ There are [three categories](#) of endowment funds as defined by the IRS.

- ²²² • **Term endowments** (temporarily restricted endowments) are funds that are donor-restricted,
²²³ which means they are meant to be used for a certain amount of time or until a particular event.
- ²²⁴ • **Permanent endowments** are endowment funds from donor-restricted gifts where the initial
²²⁵ fund must be invested; however gains or losses from these investments can be used by the
²²⁶ organization.
- ²²⁷ • **Board-designated or quasi-endowment** are funds that were internally designated for a specific
²²⁸ use but are not donor-restricted. Investment gains and losses are typically utilized; however, the
²²⁹ principal funds can be expended at any time.

230 Most dance companies have their endowment funds primarily in the permanent endowment
 231 category, whereas the proportion held as a board-designated/quasi-endowment is typically less than
 232 25%, as is the proportion held as a temporarily restricted endowment (1). For the majority of companies,
 233 the proportions held in each category are fairly consistent across the years. In fact, some companies
 234 held their endowment in a single category across all years on file (Table 3).

Table 3. Organizations with 100% of their Endowments in One Category for All Years on File

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

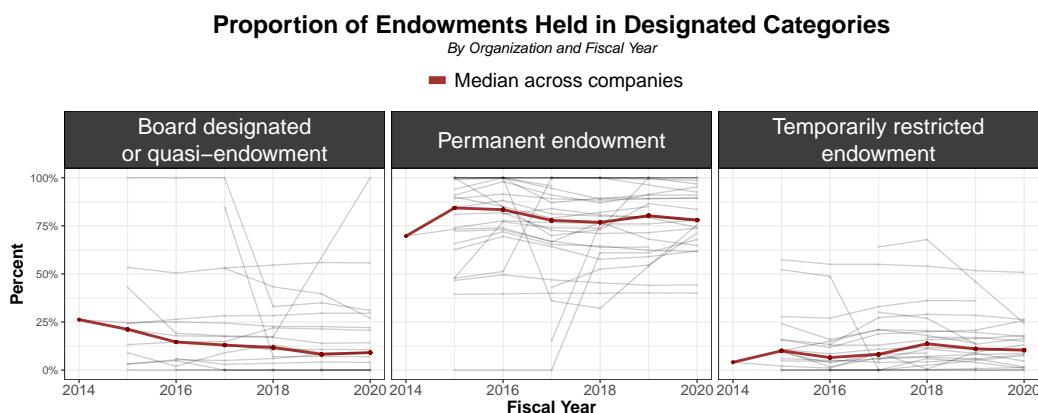


Figure 1. The percent of endowments held as a temporarily restricted endowment, permanent endowment, or board designated or quasi-endowment. The median across all companies by fiscal year is shown in red.

235 However, there are several notable exceptions to the general trend of consistency across years.
 236 Defining variability as the maximum standard deviation of the proportions for each category, the most
 237 variable 5 companies were Fort Wayne Ballet, San Francisco Ballet, Nashville Ballet, Atlanta Ballet, and
 238 the Washington Ballet (Figure 2).

- 239 • For Fort Wayne Ballet, most of the endowment funds (86%) were board
 240 designated/quasi-endowment in 2017, but this dropped to a mere 7% in 2018. The percentage of
 241 the endowment funds in the permanent endowment category increased accordingly.
- 242 • 100% of San Francisco Ballet's endowment was in the board designated/quasi-endowment
 243 category up until 2018, when the percentage in board designated/quasi-endowment dropped to
 244 33% and most (61%) was a permanent endowment.

- 245 • The trends in Nashville Ballet's endowment went the opposite direction, with a large increase in
 246 the percentage in the board designated/quasi-endowment category (17% to 74%) and decrease in
 247 the percentage in the permanent category.
 248 • For Atlanta Ballet, there is a dramatic shift in 2017 where the percentage held as temporarily
 249 restricted goes from 0% to 64%.
 250 • The Washington Ballet had a high proportion of its endowment in the temporarily restricted
 251 category (52%) but by 2017 all their endowment funds were in the permanent endowment
 252 category.

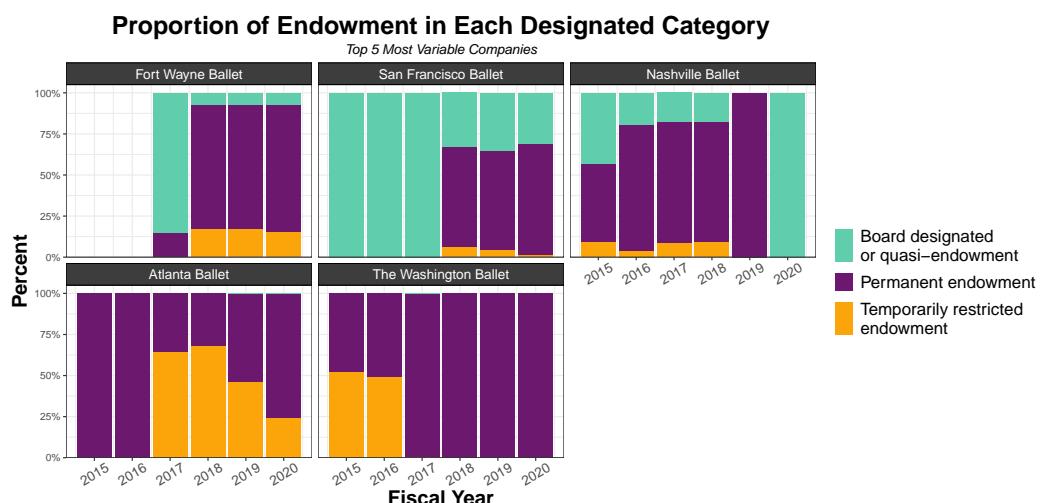


Figure 2. Proportions of endowments in each designated category over time for the 5 companies with the most variability. The most variable companies is defined by considering the maximum standard deviation in the proportion in any one category.

253 6.1.3. Which Companies Have Endowments?

254 One of the most fundamental questions about endowments is how many companies report them,
 255 and how the number of companies reporting endowments varies over time. To report endowments,
 256 nonprofits fill out Schedule D in Form 990. Out of the 169 dance companies investigated, 47 reported
 257 endowments at least once in Schedule D (Table 4).

Table 4. Number of Companies that Reported an Endowment

	Reported an Endowment	Did Not Report an Endowment
By Year		
2014	1	6
2015	35	70
2016	37	79
2017	42	83
2018	40	96
2019	40	106
2020	40	83
2021	6	21
Reported an Endowment at Least Once		
	47	122

258 6.1.4. Consistency of Endowment Reporting

259 In investigating the frequency of reporting endowments, it is apparent that most companies who
 260 report an endowment continue to consistently do so across their 990 filings (Figure 3). Some, however,
 261 including Oregon Ballet Theater and Ballet Des Moines, begin reporting an endowment well after
 262 their first filed 990. Other companies such as The Charleston Ballet, Colorado Ballet, and American
 263 Repertory Ballet stopped reporting endowments.

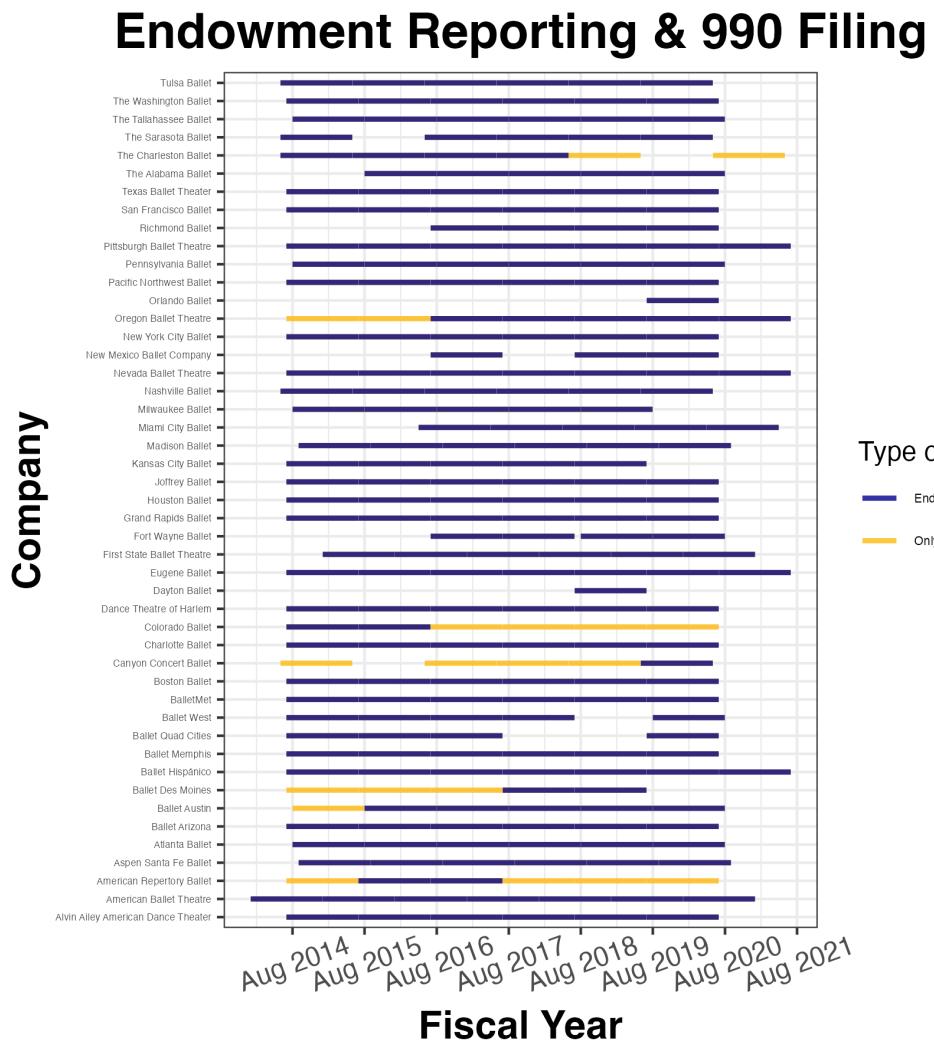


Figure 3. Continuity of filings among dance companies; gaps in a companies' filings correspond to missing fiscal years.

264 6.1.5. Ranking Companies' Endowments

265 Ranking companies can be useful to see how endowments did relative to each other rather than
 266 looking at the raw values, which are on immensely different scales.

267 When viewing the rankings of the beginning of year balance of companies' endowments, it is
 268 immediately apparent that the top 7 companies, New York City Ballet, San Francisco Ballet, Houston
 269 Ballet, Alvin Ailey American Dance Theater, American Ballet Theatre, Pacific Northwest Ballet, and
 270 Boston Ballet, see no changes in ranking from 2013 to 2020 (Figure 4).

271 Below the top 7, there are more shifts in the rankings across time, with some companies changing
 272 dramatically in ranking. This includes:

- 273 • A dramatic decrease in Aspen Santa Fe Ballet's ranking from 2018 through 2020, due to the
 274 company's decisions noted [previously](#).
 275 • A marked increase in:
 276 - Joffrey Ballet's ranking
 277 - Orlando Ballet's ranking
 278 - Fort Wayne Ballet's ranking
 279 - Ballet Arizona's ranking
 280 • A decrease in Atlanta Ballet's ranking from 2013 to 2015 that then recovered.

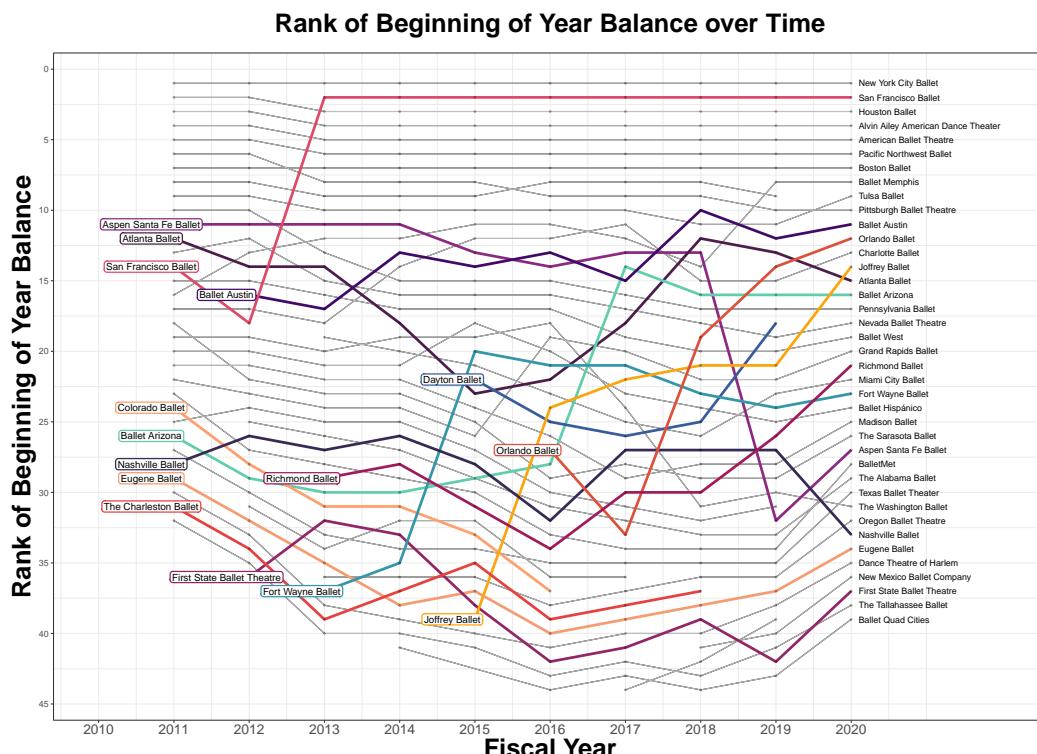


Figure 4. Rank of the endowment beginning of year balance over time. The 15 companies with the most variability in ranking, defined as the mean difference in rankings between fiscal years, are shown in color. Names of all companies are on the right.

281 The relationship between contributions and endowments warrants exploration since both of these
 282 sources of funds can enhance a company's financial well-being.

283 When the lines for each company from Figure 4 are colored by how these companies ranked
 284 in contributions (Figure 5), a couple of trends are clear. For one, companies that are ranked high in
 285 endowments tend to rank high in contributions; for example, New York City Ballet is top-ranked in
 286 both endowments and contributions. Similarly, companies ranking low in endowments tend to rank
 287 low in contributions.

288 Notably, several of the companies that experienced notable changes in their rankings also were
 289 ranked high in contributions, in particular, Orlando Ballet and Joffrey Ballet.

290 High contributions, in these cases, may have contributed to Orlando Ballet's and Joffrey Ballet's
 291 enormous growth in their endowments across time, which may enhance their financial stability in
 292 years to come.

293 Understanding how contributions relate to changes in endowment balances is important in
 294 understanding how these contributions impact companies long-term.

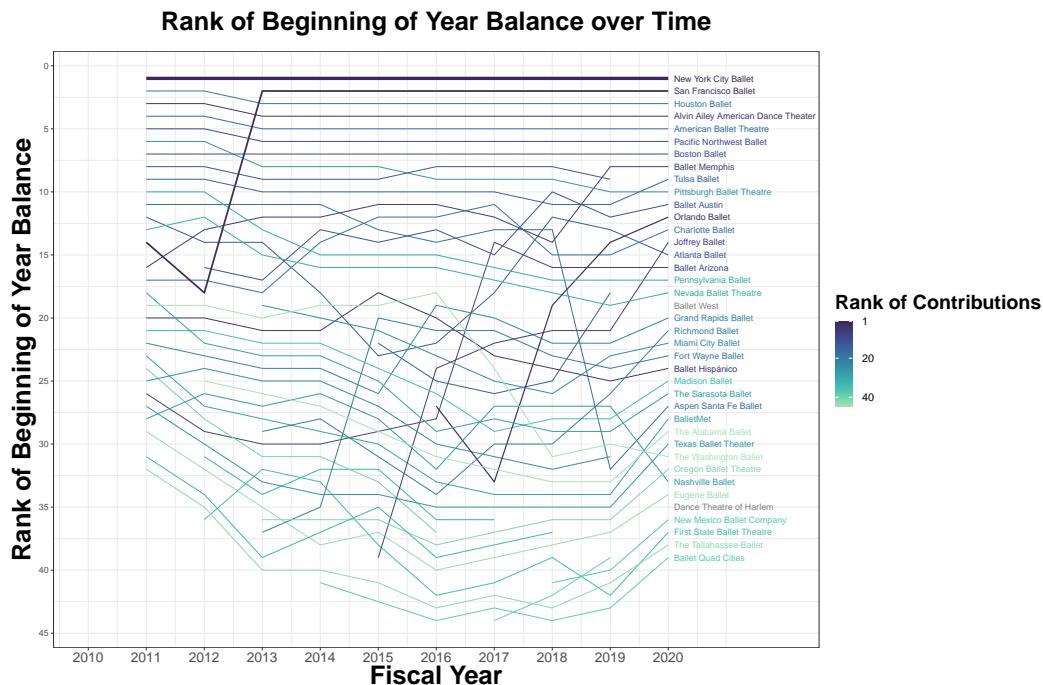


Figure 5. Rank of the endowment beginning of year balance over time, where the color indicates the ranking of the mean contributions received over all years on file for the company.

295 Looking more closely at the relationship between contribution rankings and beginning-of-year
 296 balance rankings, in Figure 6, there is a strong relationship between how a company ranks with regard
 297 to their contributions relative to the other companies and how a company ranks in the endowment
 298 beginning of year balance. That is, when companies are ranked high at the beginning of the year
 299 balance, they tend to rank high in contributions as well. As expected, this trend holds across the full
 300 set of fiscal years considered.

301 However, the rankings are often not identical. If they were, all points would fall on the red line,
 302 which represents an exact correspondence between rankings. In some cases, a company consistently
 303 ranks higher in contributions relative to the beginning-of-year balance. Whether the contributions
 304 or beginning-of-year balance tends to rank higher for a given company is summarized in Figure 7.
 305 For example, Ballet West ranked higher in the endowment beginning-of-year balance for each year
 306 available (2016 - 2020), while Nashville Ballet ranked higher in contributions than the beginning-of-year
 307 balance for every year on file (2011 - 2022).

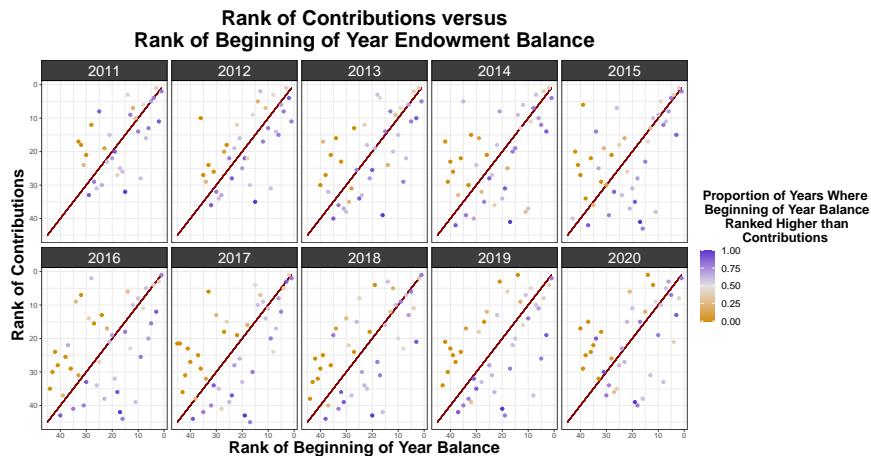


Figure 6. Comparing the rankings of beginning of year balance of the endowment to the ranking of contributions received.

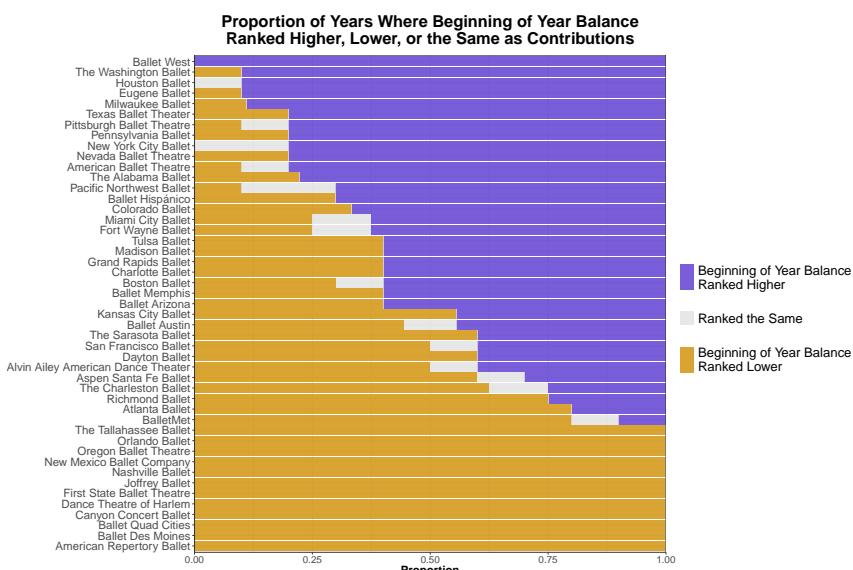


Figure 7. Comparing the proportion of years where a company ranked higher, lower, or the same in beginning of year balance compared to contributions received. A higher rank means a rank closer to 1, where 1 is the top possible rank.

308 In contrast to the observations in the rankings of the beginning of year balance (Figures 5 and
 309 4), Figure 8 demonstrates that the rankings of contributions are much less consistent. It is clear that
 310 contributions are a less stable source of funding for these companies, and the amount companies
 311 receive year to year varies considerably.

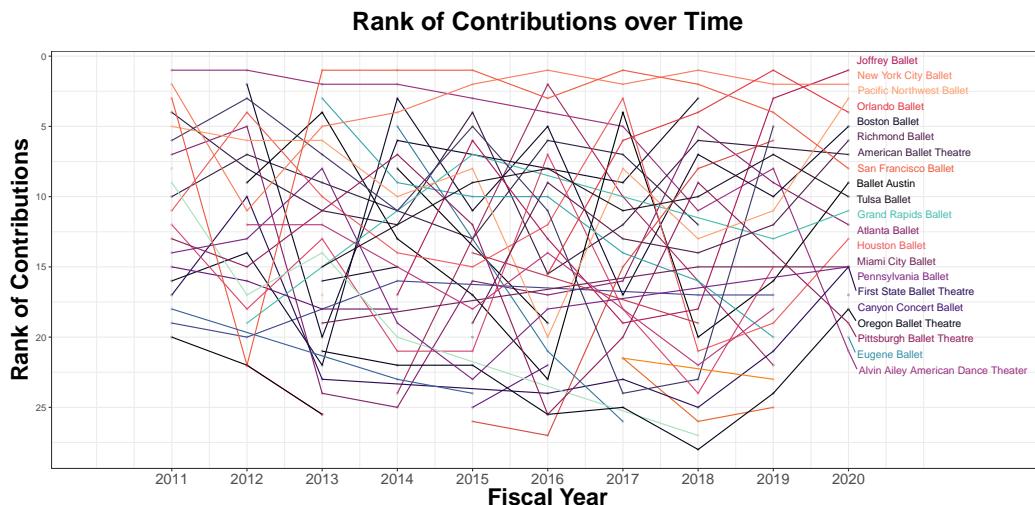


Figure 8. The rankings of contributions over time, by organization.

312 6.1.6. NOT TO BE PUBLISHED: Reported Endowment Balances over time - Is the Math right?

313 Due to time constraints within our project, the capstone team did not have the opportunity to
 314 reach out to any companies regarding their miscalculations or reporting of negative expenses.
 315 The team recommends doing this prior to this report being published.

316 Theoretically, one can calculate an endowment's fiscal year end balance based on all information
 317 provided in Schedule D. The end-of-year balance was calculated (see the equation below) and then
 318 compared our calculated balance to the reported end-of-year balance. The majority of calculations
 319 are concordant; however, discrepancies were noted in thirteen companies. Discrepancies range from
 320 \$-20,000 (Orlando Ballet, 2016) to \$8,301,066 (Atlanta Ballet, 2017). Due to the scaling of the below
 321 figure, differences in reported and calculated balances below a hundred thousand dollars are difficult
 322 to see.

$$\begin{aligned}
 323 \quad \text{Calculated Year End Balance} &= \text{Beginning Year Balance} + \text{Contributions} + \\
 324 \quad &\text{Investment Earnings or Losses} - |\text{Administrative Expenditures}| - \\
 325 \quad &|\text{Other Expenditures}| - |\text{Grants or Scholarships}| \quad (1)
 \end{aligned}$$

326 For values related to expenses (administrative expenditures, other expenditures, grants, or
 327 scholarships), the absolute value was used to ensure all were positive numbers. Four companies
 328 (Ballet Hispánico, Atlanta Ballet, Miami City Ballet, and Dance Theatre of Harlem) report their other
 329 expenditures as a negative value; thus, when calculating end-of-year balance, subtracting a negative
 330 value would result in an additive, not subtractive, effect.

331 The difference in the extent of discrepancies when the absolute value is taken (Figure 9 (a)), as
 332 in equation (1), versus when it is not (Figure 9 (b)). There are fewer discrepancies when the absolute
 333 value is taken.

334 Since the difference was computed by taking Reported End Balance – Calculated End Balance,
 335 negative values indicate the calculated end balance was larger than the reported, and positive values
 336 indicate the reported end balance was larger. The calculated differences are split between being
 337 negative or positive.

338 Atlanta Ballet has the largest discrepancy in (a); however, if the absolute value isn't used and the
 339 negatives as is used in (b), the values are concordant. The opposite issue occurs for Miami City Ballet,
 340 whereby in (a) with the absolute value, they are concordant. However, in (b) without the absolute
 341 value of expenses, they appear eight times. Both of these situations stem from reports of negative

values in an expenses column, although they are mirrored situations. Thus, this raises the question of how negative expenses should be dealt with.

Considering panel (a), most companies only miscalculate once; however, there are multiple miscalculations for Fort Wayne Ballet, Atlanta Ballet, and Ballet Arizona. Of note, some of these differences were trivial (e.g., \$10). Eugene Ballet does not report an end-of-year balance for 2011, yet reports a beginning balance of \$45,000, hence the -\$45,000 difference for this year.

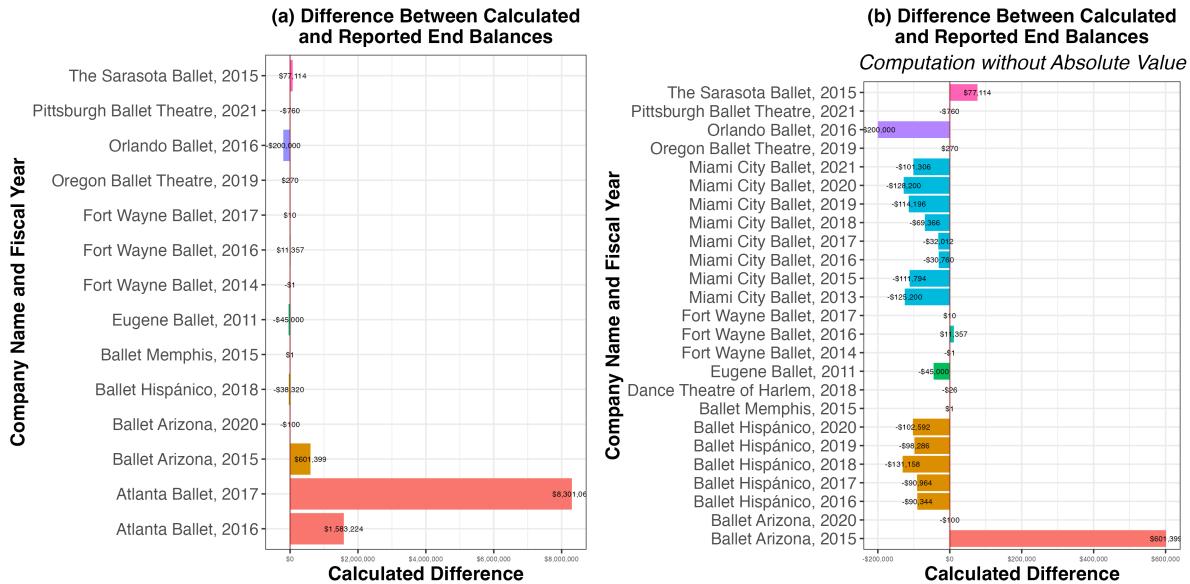


Figure 9. Comparing the reported end of year balance to that were computed based on other reported variables. Calculation is done with the absolute value in (a) and without in (b). Each organization is in a different color.

We summarize the discrepancies found by taking the absolute value (e.g. panel (a) of the above figure) in Figure 10. When taking the absolute value, the company that misreports the most is Fort Wayne Ballet with three miscalculations.

In future work involving end balance, the reported end-of-year balance was utilized, as it is still uncertain how to handle negative expenses. Thus, values that are incorrectly reported might possibly be used. End balance is involved in calculations for two examinations in particular: 4.1.5 with Annual Percent Change and 4.1.6 Compound Growth Rate. Any erroneous end-of-year balances will thus produce inaccurate figures. Thus, for companies whereby an incongruence was identified (either with or without absolute value), it is not certain whether our calculated Compound Growth Rate or Annual Percent Change accurately reflects those companies' endowment growth or behavior.

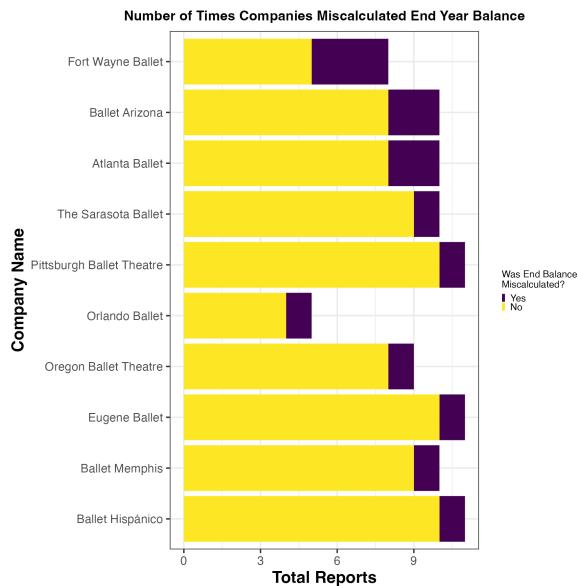


Figure 10. Number of observations where there was a discrepancy between the calculated and reported end of year balance, using the absolute value equation given in equation (1).

357 6.1.7. Change in Endowments Over Time

358 Annual percent change is the percent change from one value to the next at the end of a year-long
 359 period. With regard to endowment balances, the annual percent change in endowment balance is a
 360 comparison between the endowment at the beginning of the fiscal year and the endowment at the
 361 end of the fiscal year, which allows interpretation of the percentage by which the endowment has
 362 grown or shrunk. Charting percent change over time facilitates viewing endowment behavior over
 363 time; further, one can compare percent changes between companies to get a sense of trends in how
 364 different companies' endowments change.

365 With regard to the interpretation of percent change, a couple of standard definitions are first
 366 stated.

367 The relative change, which represents how much a value has changed relative to its initial value,
 368 is

$$\text{Relative change} = \frac{\text{End Value} - \text{Start Value}}{\text{Start Value}}.$$

369 The effect of considering relative change facilitates comparison between companies that have
 370 enormously different beginning-of-year balance sizes. For a company with a small endowment, a
 371 difference of \$10,000 may be substantial, while the same difference would be minimal if the company
 372 has over a million dollars in its endowment.

373 The percent change, which is the relative change in percentage form, is simply Relative Change \times
 374 100.

375 When considering the percent change within a fiscal year, that is, from the beginning of year
 376 balance to the end of year balance, a couple of examples of the interpretation include²:

- 377 • If the percent change is -50% , the endowment's value at the end of the fiscal year is half of what
 378 it was at the beginning.

2 For a relative change of value R , it can be more intuitive to interpret it by considering the expression $\text{End Value} = (R + 1) \times \text{Start Value}$. That is, if a relative change is identified, 1 is added to it and it is multiplied by the starting value to acquire the end value.

- 379 • If the percent change is 100%, the endowment's value at the end of the fiscal year is twice what it
 380 was at the beginning.
- 381 • If the percent change is -100% , the endowment's value dropped to zero throughout the fiscal
 383 year.

384 We calculated each company's within-year percent change of endowment balance, as this allows
 385 for comparison of the performance of different companies' endowments over time. A positive percent
 386 change indicates growth within the fiscal year; a negative percent change indicates a loss.

387 The percent change of most companies falls between -100% and 200% (Figure 12). There are
 388 notable outliers, however, such as Joffrey Ballet in 2016 with a $\sim 3,000\%$ increase (11). By focusing
 389 on lines between -100% and 200% , a trend appears with many companies growing and shrinking at
 390 similar rates around similar times. Thus, plotting the within-year percent change of the S&P 500 as a
 391 proxy for the stock market, many companies' endowment balances reflect the performance of the stock
 392 market; this is unsurprising, given the inherent invested nature of endowments. To assess companies'
 393 "raw" performance—in other words, how they managed their endowments outside of their investment
 394 returns—we adjusted all percent changes for investment earnings or losses, which flattened the stock
 395 market trend (Figure 13). The capstone team used this flattened plot to investigate large decreases and
 396 increases in endowment funds, as well as the long-term behavior of endowments.

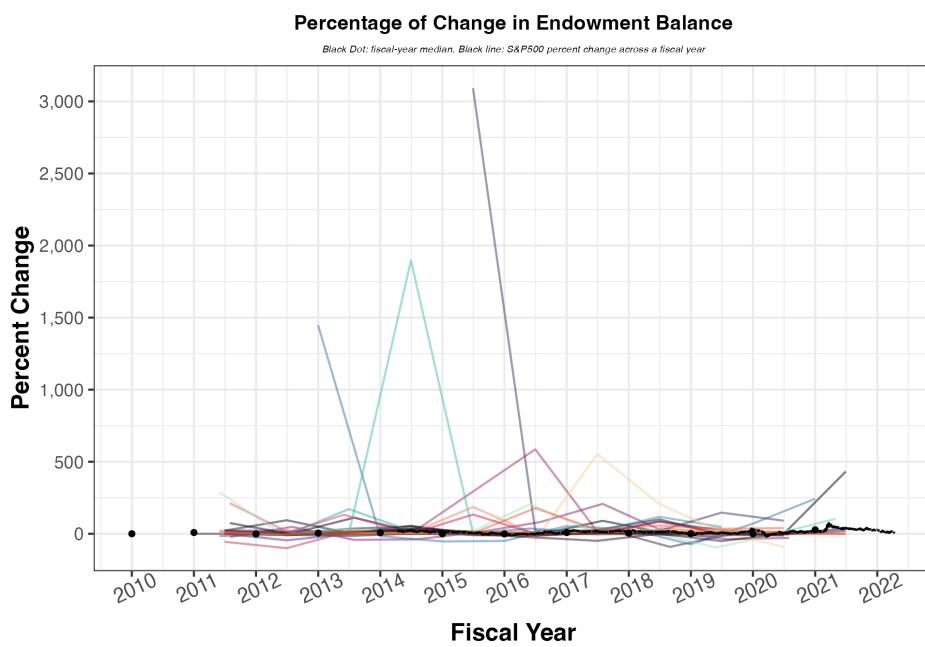


Figure 11. Percent change in endowment balance over time, including the full range of percent changes, revealing several clear outliers.

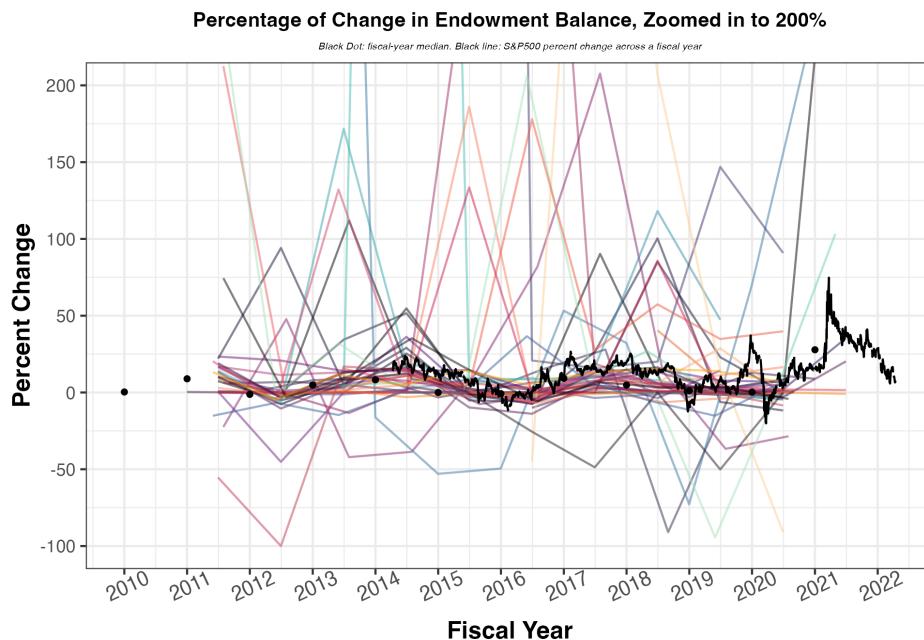


Figure 12. Percent change in endowment balance over time, restricting the range to -200 percent to 200 percent to remove outliers than reduce our ability to see trends for the majority of companies.

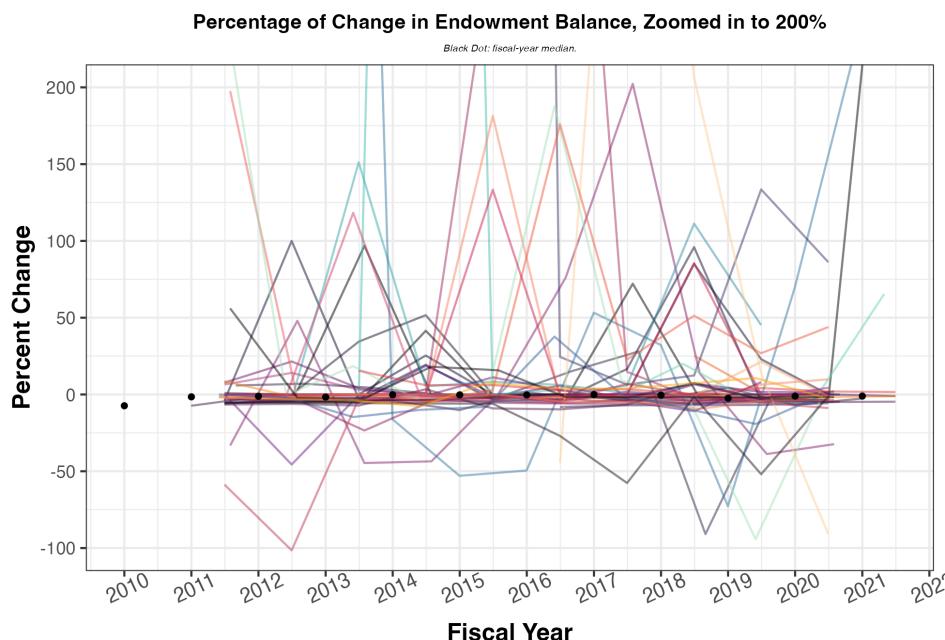


Figure 13. Adjusting for investment earnings or losses when computing the endowment percent changes flattens the trends observable when using the unadjusted endowment values.

397 Examining particular companies (Figure 14), it is apparent that eight companies reduce their
 398 endowment by over 40% (e.g. Percent Change lower than -40%) across multiple years. There are eight
 399 companies that do so (Table 4) Aspen Santa Fe Ballet, Atlanta Ballet, First State Ballet Theatre, Nashville
 400 Ballet, Orlando Ballet, San Francisco Ballet, and The Washington Ballet. Some of these companies
 401 reduce their endowments by over 40% multiple times. While it is not certain why more companies
 402 have such severe reductions in endowment balance, reductions can indicate a variety of situations

403 for a company, such as: dispersing their funds into a new fiscal entity³, struggling financially in a
 404 given fiscal year, spending newly-unrestricted funds, or purchasing large items such as a building.
 405 Few companies severely reduce their endowment, thus the majority of US dance companies with
 406 endowments are able to maintain their savings and receive income from their endowments.

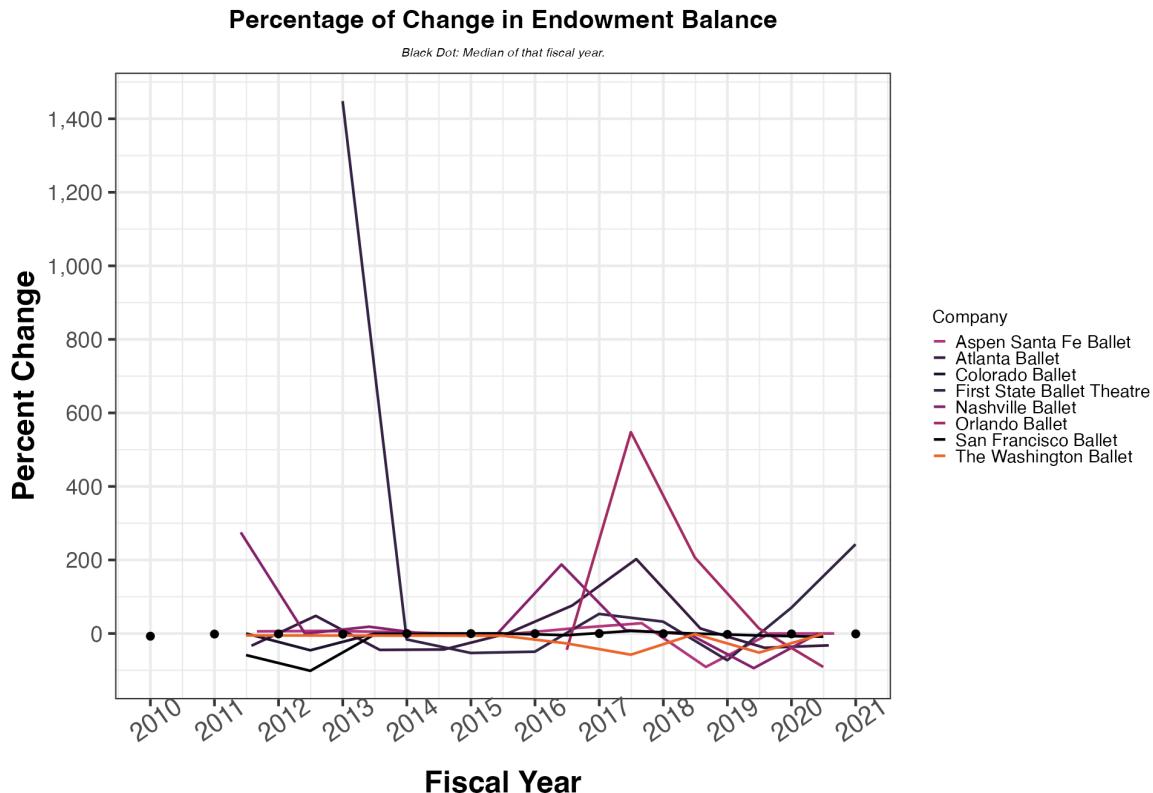


Figure 14. Companies that reduce their endowment by over 40 percent.

407 Additionally, eight companies increased their endowment by over 200% (percent Change higher
 408 than 200%) across multiple years, which means they at minimum tripled their endowment (15).
 409 These eight companies are Atlanta Ballet, Ballet Arizona, Ballet Hispánico, First State Ballet Theatre,
 410 Fort Wayne Ballet, Joffrey Ballet, Nashville Ballet, and Orlando Ballet. Such dramatic increases are
 411 potentially indicative of large donations, liquidation of assets such as buildings, or aggregation of
 412 funds from separate endowment accounts.

³ Aspen Santa Fe Ballet transferred most of their endowment into Aspen Santa Fe Ballet Endowment Inc in 2018; see the note on Aspen Santa Fe in the [previous section](#).

Table 5. Endowment Percent Change Dropping Below 40 Percent Of Beginning Year balance

Company Name	Percent Change	Beginning Balance	End Balance	Fiscal Year
Aspen Santa Fe Ballet	-90.9	6065013	550000	2018
Atlanta Ballet	-43.5	1706513	1046921	2014
Atlanta Ballet	-44.6	2947203	1706513	2013
Colorado Ballet	-45.6	182437	100000	2012
First State Ballet Theatre	-72.7	36693	10000	2018
First State Ballet Theatre	-49.5	35876	18107	2015
First State Ballet Theatre	-53.0	76261	35876	2014
Nashville Ballet	-94.2	1095624	61350	2019
Orlando Ballet	-91.0	7732855	696082	2020
Orlando Ballet	-44.3	613186	338943	2016
San Francisco Ballet	-101.5	1035814	174	2012
San Francisco Ballet	-58.7	2318646	1035814	2011
The Washington Ballet	-51.9	621423	310000	2019
The Washington Ballet	-57.6	1212247	621423	2017

Percentage of Change in Endowment Balance

Black Dot: Median of that fiscal year.

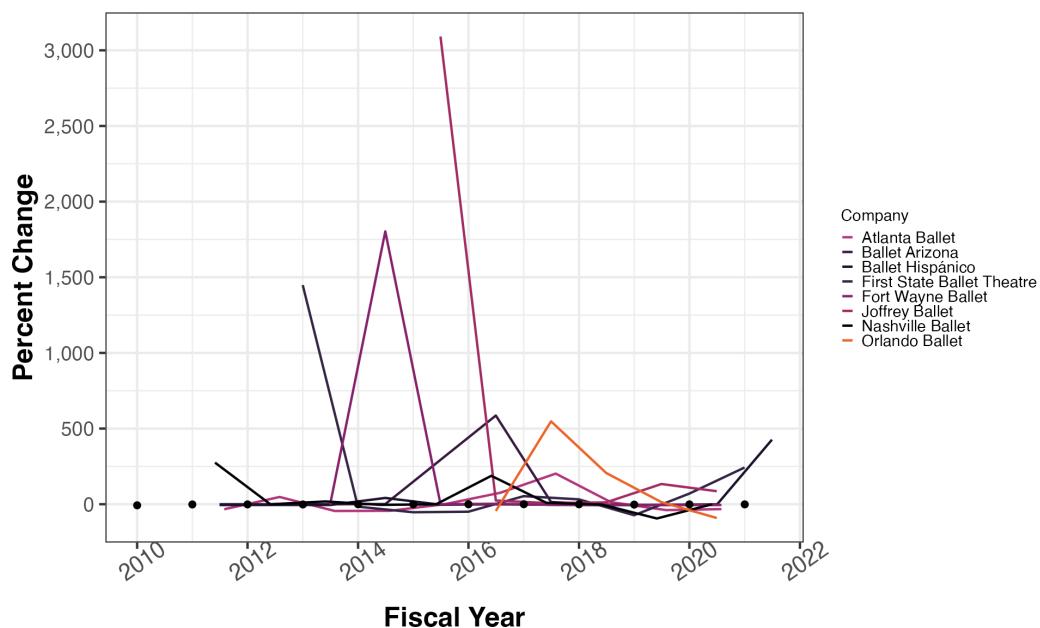
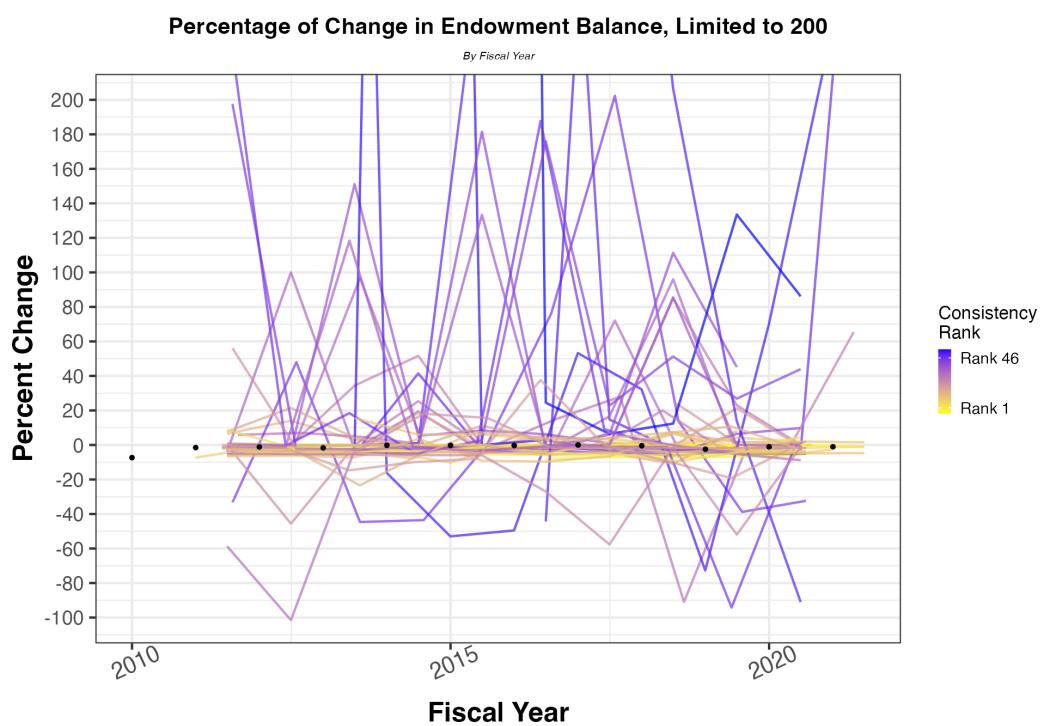


Figure 15. Annual percent change for companies that increased their endowment over 200 percent.

To examine the behavior of endowments, each company was ranked by its consistency over time. Consistency is defined by ranking companies by their standard deviation of a company's percent change across all years on file. The smaller the standard deviation, the more consistent the company's endowment behavior was, thus the higher the rank. (Figure 16). Many companies that have consistent balances tend to not make large adjustments to their percent change. Further, consistency in endowment does not appear to be related to company size (Figure 17), as measured by both the endowment total balance and the number of employees.

Table 6. Endowment Percent Change Increasing Beyond 200 Percent Of Beginning Year Balance

Company Name	Percent Change	Beginning Balance	End Balance	Fiscal Year
Atlanta Ballet	202.3	2119967	6523144	2017
Ballet Arizona	586.1	601399	4126424	2016
Ballet Hispánico	426.8	1405952	7481852	2021
First State Ballet Theatre	242.7	16999	58253	2020
First State Ballet Theatre	242.7	16999	58253	2020
First State Ballet Theatre	1448.1	5874	90934	2012
Fort Wayne Ballet	1803.3	60137	1201082	2014
Joffrey Ballet	3091.4	35600	1136139	2015
Nashville Ballet	275.0	54543	212030	2011
Orlando Ballet	206.4	2212808	6791249	2018
Orlando Ballet	547.7	338943	2212808	2017

**Figure 16**

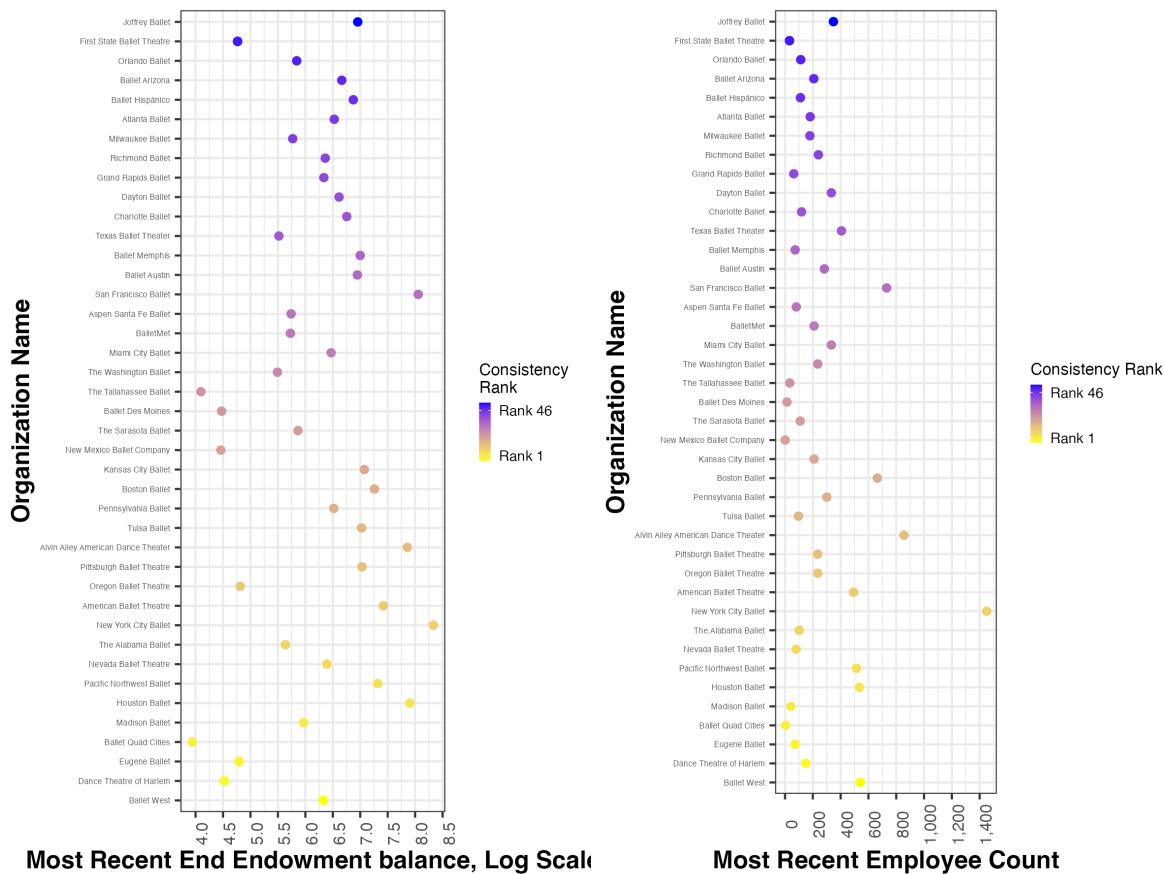


Figure 17

420 6.1.8. Compound Annual Growth Rate

421 The compound annual growth rate is a useful way to summarize the performance of different
 422 endowments over the same time period since the variability in annual growth rates can make it difficult
 423 to see broader trends. One can think of this rate where, if the value grew by this same rate each year, it
 424 would produce the end value at the end of the time period considered.

425 When looking at the compound annual growth rate in this setting, it is helpful to account for
 426 withdrawals and contributions to separate how endowments are doing due to investment decisions
 427 versus how they change due to large contributions or withdrawals.

428 The basic formula for the compound growth rate over t years is

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

429 Withdrawals as reported on the 990 include other expenditures, grants and scholarships, and
 430 administrative expenses.

431 This means it is possible to compute the withdrawals for any given year and company as

$$\text{Withdrawals} = \text{Other Expenditures} + \text{Administrative Expenses} + \text{Administrative Expenses} + \text{Grants and Scholarships}.$$

432 To adjust for contributions and expenditures, the Compound Annual Growth Rate is defined as

$$\left(\frac{\text{End Value} + \sum_{i=1}^{t-1} \text{Withdrawals} - \sum_{i=1}^{t-1} \text{Contributions}}{\text{Beginning Value}} \right)^{\frac{1}{t}} - 1.$$

433 Adding back the withdrawals and subtracting off the contributions facilitates visualization of
434 differences in endowments that are due specifically to investment choices. Otherwise, it would not be
435 possible to tell whether a large increase in endowment funds in a particular year was due to investment
436 gains or a large contribution.

437 In Figure 18, the compound growth rates of the companies to the compound growth rate of the
438 S&P 500 over the same time period are compared, where the S&P 500 is used as a benchmark to
439 indicate how the stock market is doing overall. Variations in the S&P 500 across companies for a given
440 time interval are due to differences in their fiscal years. While Ballet Arizona and San Francisco have
441 enormous differences when considering the time intervals 2011 to 2020 and 2015 to 2020, it is unclear
442 whether these changes are truly this large in magnitude or if the differences are due to discrepancies in
443 reporting. Although the capstone team reached out to both companies to clarify discrepancies in the
444 early years, the capstone team received no reply.

445 A substantial proportion (about 40% of the companies for the 2011-2020 time period, and about
446 50% of companies for the 2015-2020 and 2017-2020 time periods) had a compound annual growth rate
447 of less than 5%. The same concept is clear at a more granular level considering the annual growth rates
448 in Figure 19.

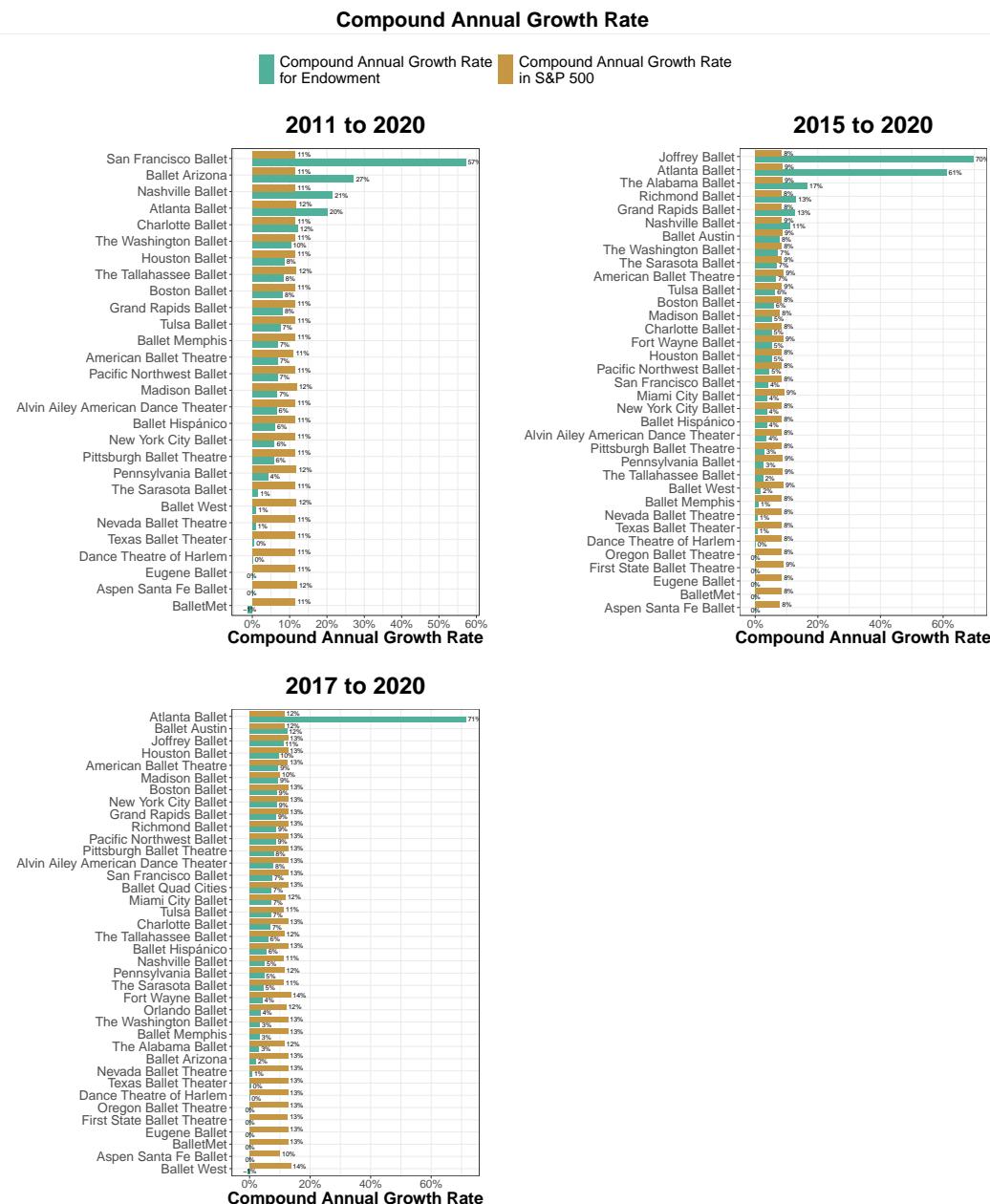


Figure 18. Compound annual growth rates for all organizations compared to the compound annual growth rate for the S&P 500 for three time periods. Not all companies are present in each plot since not all companies have data going back the same number of years. Of note, year-to-year differences in the compound annual growth rate of the S&P 500 are due to differences in companies' fiscal years.

Annual Growth of the S&P 500 Compared to the Annual Growth in Endowments

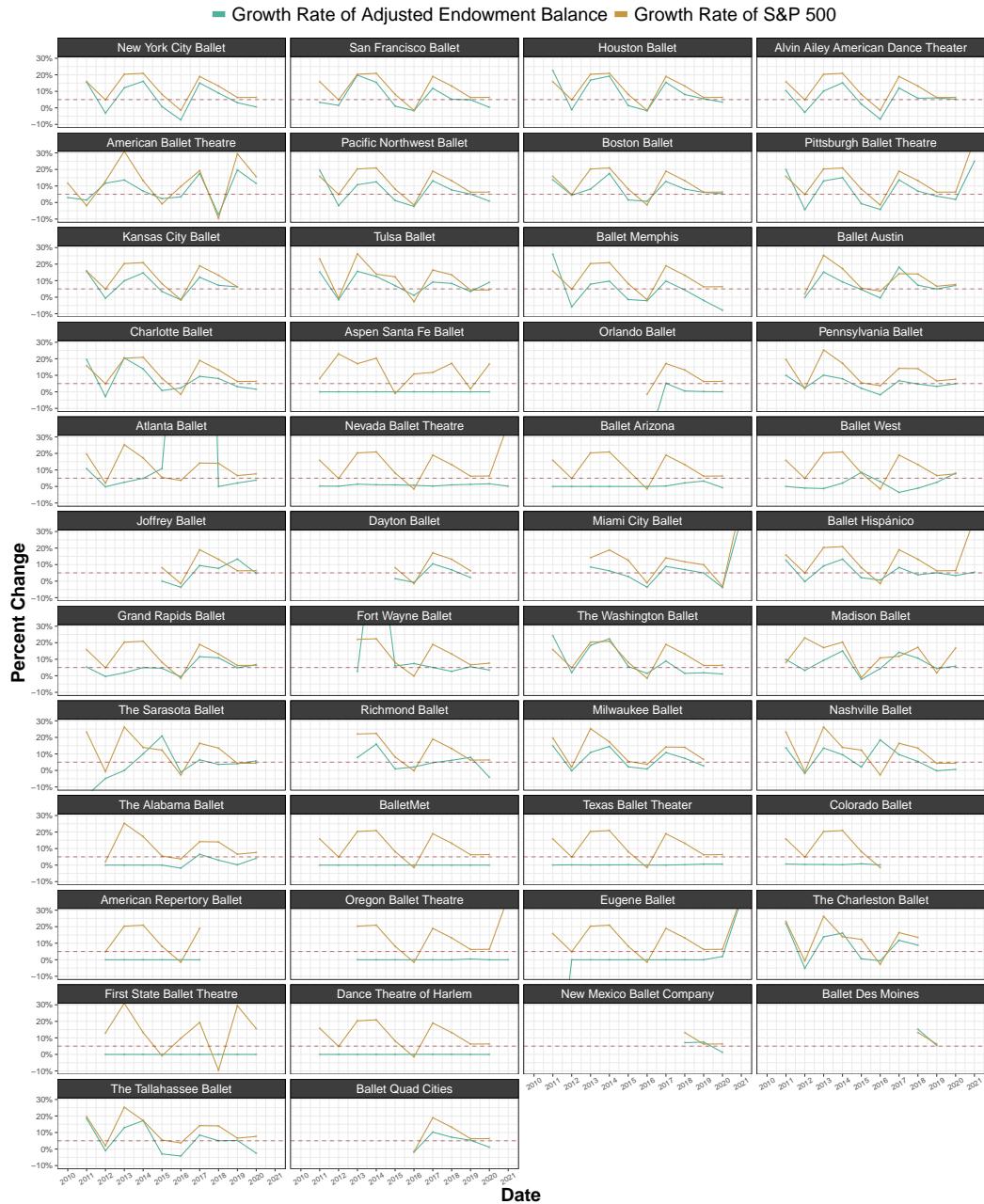


Figure 19. Annual growth rate of a company's endowment when adjusting for contributions and withdrawals, compared to the annual growth S&P 500 for the corresponding time period. Companies are ordered by mean endowment size across years on file, with companies with the largest endowments appearing first. A horizontal line at 5 percent is shown for reference.

⁴⁴⁹ 6.2. Volunteer & Paid Labor

⁴⁵⁰ 6.2.1. Key Takeaways

- ⁴⁵¹ • The highest proportion of companies who rely more on volunteer labor than paid employees is
⁴⁵² the South, then the Midwest, followed by the West, then Mid-America, New England, and then
⁴⁵³ the Mid-Atlantic.
- ⁴⁵⁴ • The percent paid to C-Suite employees ranges from 0% to a little over 30%, and consistently has a
⁴⁵⁵ median near 10% (Figure 23). Companies with notable changes in the percent paid to C-Suite
⁴⁵⁶ employees across years includes First State Ballet Theatre, American Repertory Ballet, Cincinnati
⁴⁵⁷ Ballet, and Oregon Ballet Theatre (Figures 23 and 24)
- ⁴⁵⁸

⁴⁵⁹ 6.2.2. Volunteer Labor and Geography

⁴⁶⁰ Overall, more labor (both volunteer and employee) is used in the West, followed by the
⁴⁶¹ Mid-Atlantic, then the South, then the Midwest, then Mid-America, and finally New England. Of
⁴⁶² these regions, the one with the highest proportion of companies who rely more on volunteer labor
⁴⁶³ than paid employees is the South, then the Midwest, followed by the West, then Mid-America, New
⁴⁶⁴ England, and then the Mid-Atlantic.

⁴⁶⁵ In Figure 20, the South has the most companies who use more volunteers than employees with
⁴⁶⁶ 68% of all reported companies volunteers, followed by the Midwest, then the West, then Mid-America,
⁴⁶⁷ New England, and finally the Mid-Atlantic.

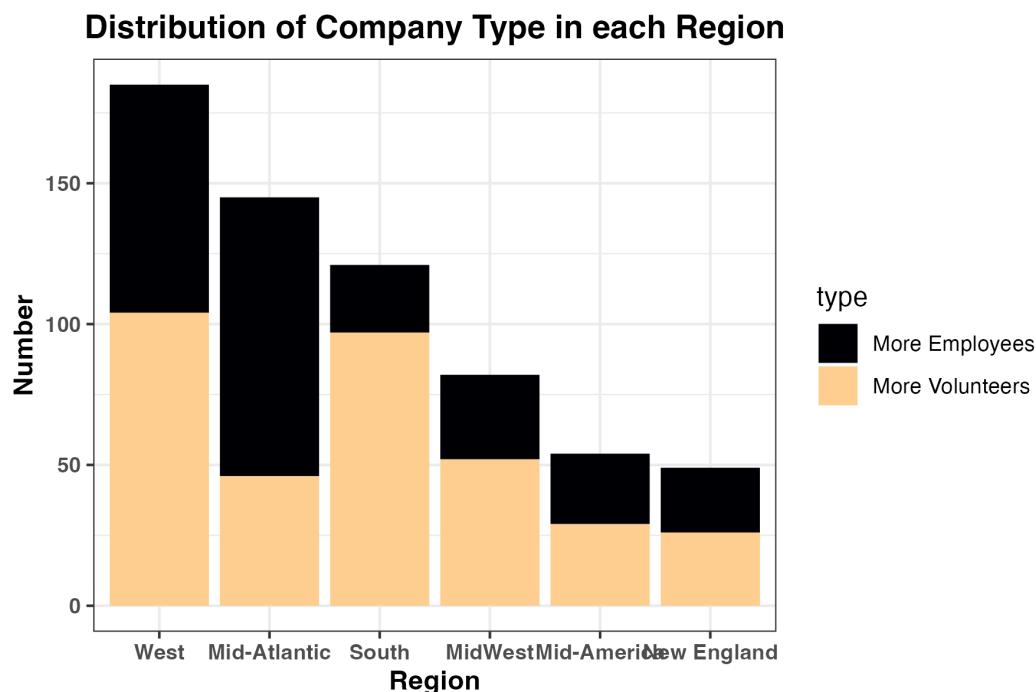


Figure 20. Total number of laborers reported for each region in the 2019 fiscal year, colored by the number of companies who report either more employees or more volunteers

⁴⁶⁸ Figure 21 shows the 1st, 2nd, 3rd, and 4th quantiles of total volunteer labor. Individual companies
⁴⁶⁹ were ranked by the total number of volunteers they reported and then computed the quantiles. The
⁴⁷⁰ share within each quantile is shown by region.

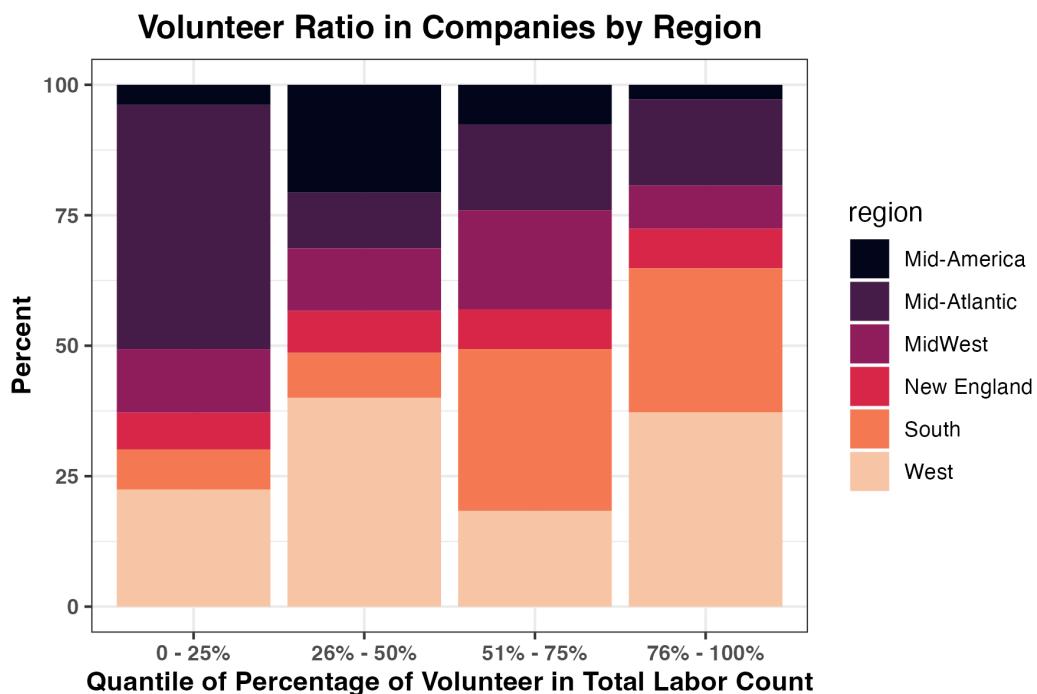


Figure 21. Share of volunteer use for each region by quantile using individual companies.

⁴⁷¹ We visualize the percentage of total labor that was volunteer labor by state across the United
⁴⁷² States in Figure 22.

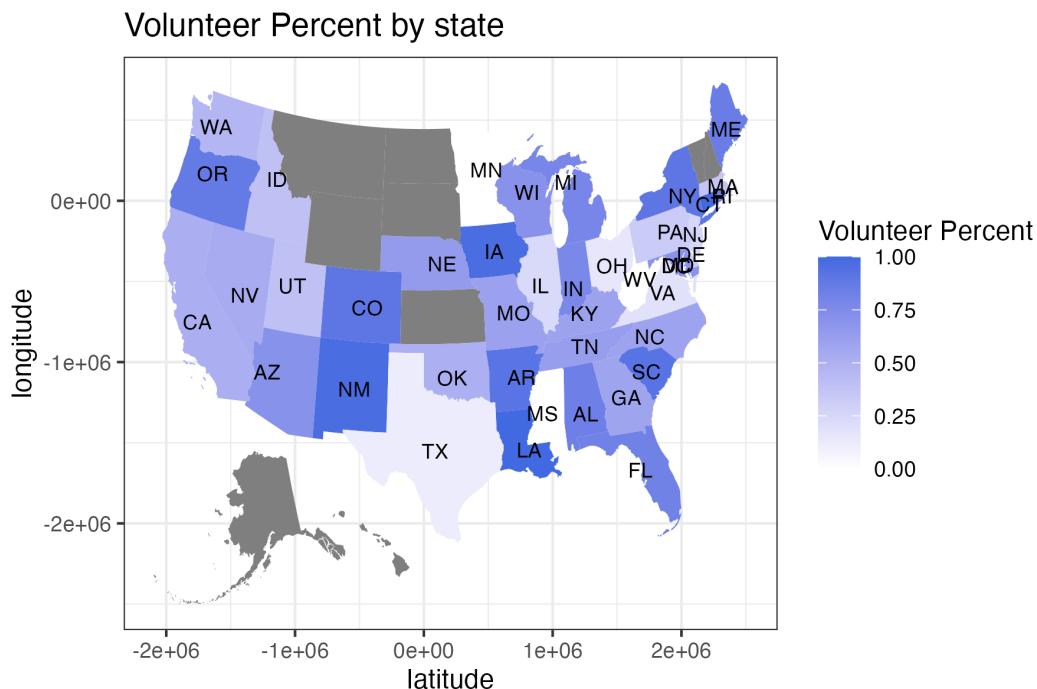


Figure 22. Share of volunteer labor among all labor by state. States, which do not have data, are in gray.

473 6.2.3. Compensation to Top Employees

474 While thinking about paid and unpaid labor in the dance industry, it is also useful to look at how
 475 compensation is distributed among paid employees.

476 In Part IX of Form 990, companies report compensation going to the set of top employees – in
 477 particular, “officers, directors, trustees, and key employees”; this set of top employees is referred to as
 478 C-Suite employees. Additionally, they report the total compensation to all employees.

479 This information allows for a comparison of what percent of total employee compensation was
 480 going to C-Suite employees. For this analysis, only companies with more than 45 employees were
 481 included. This choice was due to the extent of variability in the percentages paid to C-Suite employees
 482 in companies smaller than this threshold size since there are some years where smaller companies
 483 report zero compensation to C-Suite employees.

484 Of note, Aspen Santa Fe Ballet has previously contacted DDP® regarding C-Suite compensation,
 485 as they amended their fiscal year 2020 990s; however, as the IRS is behind in its uploading of amended
 486 returns, the corrected information is not publicly available.

487 The percentage paid to C-Suite employees ranges from 0% to a little over 30%, and is fairly
 488 constant over the years (Figure 23). The median for each fiscal year was close to 10%. However, the
 489 limited data available for 2021 shows that percentages appear to increase following the onset of the
 490 pandemic; this trend will be important to consider as more data from 2021 is released.

491 In Figure 24, where the difference in the percentage of total compensation paid to C-Suite
 492 employees in 2020 to that in 2015 is summarized, there’s actually a fairly even split between companies
 493 that increased the percent paid to C-Suite employees versus those that decreased the percent going to
 494 C-Suite employees.

Percent of Total Compensation Paid to C-Suite Employees

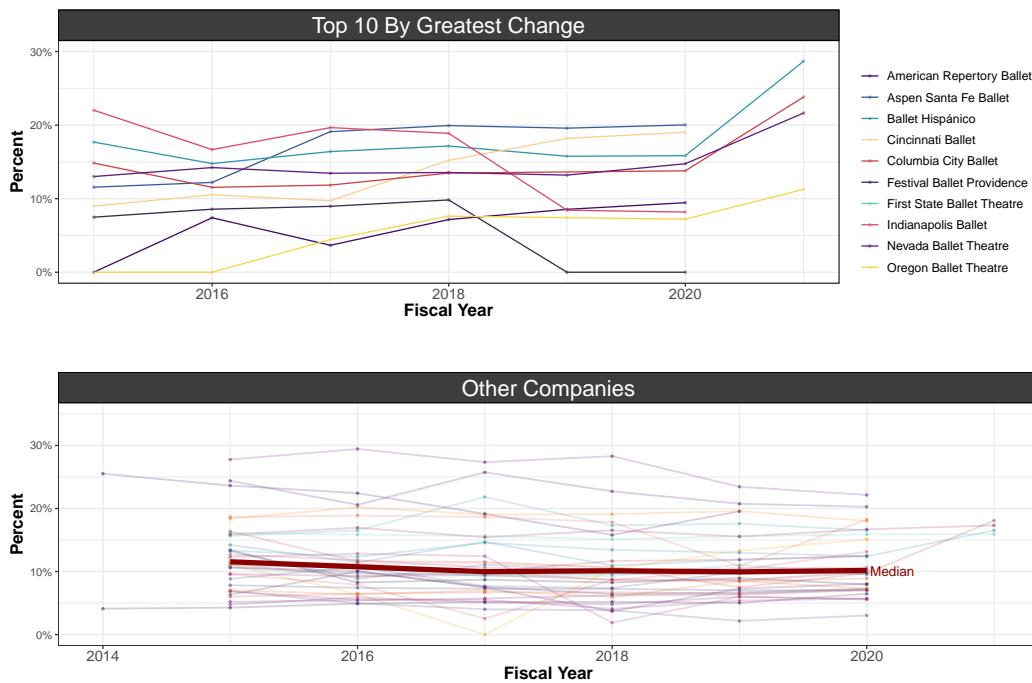


Figure 23. Percent of the total compensation paid to employees that were paid to officers, directors, trustees, or key employees, as reported in Part IX of Form 990. Highlighted in the first panel are the 10 companies that had the greatest change in the percent paid to C-Suite employees from the earliest year on file to the latest. Only companies with more than 45 employees and that reported complete data for more than 5 years are included.

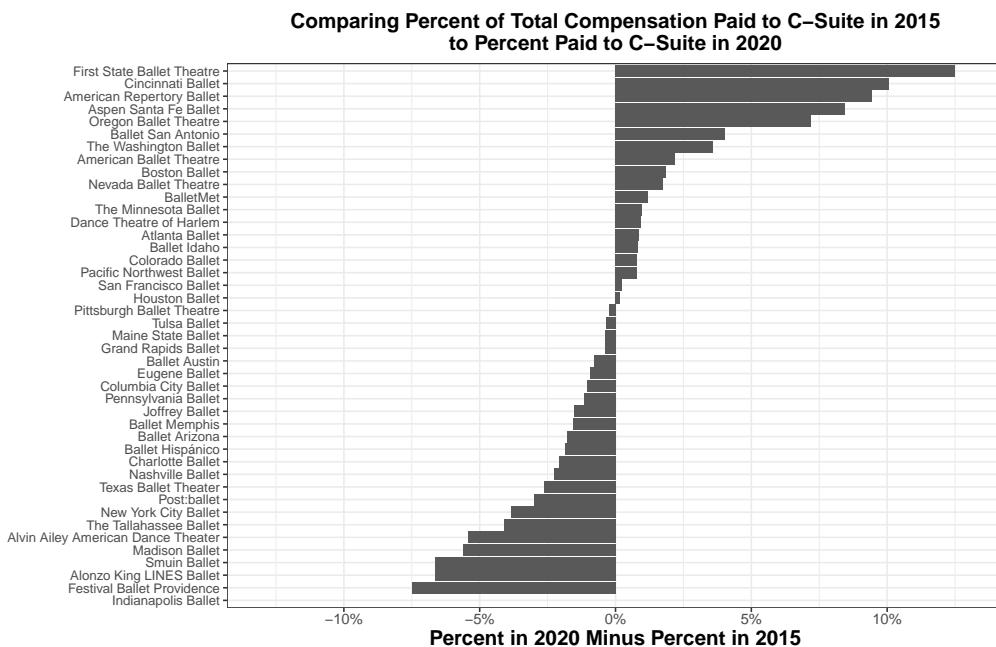


Figure 24. Comparing the percent of total compensation paid to C-Suite employees in 2015 to that in 2020. Since the 2015 percent were subtracted from the 2020 percent, positive values indicate a greater percentage of compensation went to C-Suite employees in 2020, while negative values indicate a smaller percentage of compensation went to C-Suite employees in 2020.

495 6.3. Buildings

496 6.3.1. Key Takeaways

- 497 • Most companies have stable building endowments except those that went through major buying
498 or saving behaviors.
- 499 • For those companies that went through major changes in buying or selling behaviors in buildings
500 and lands, no specific patterns as found in years or regions.
- 502 • The state that has the most companies might not have the highest sum of buildings book values,
503 which indicates that different states have different niches for dance companies.

505 In-person performances are a huge part of dance companies' business, and many shows are
506 held in companies' theaters. Therefore, analyzing how each company's endowment of buildings and
507 lands, especially their book values, is important in understanding how these companies are faring
508 economically.

509 In this analysis, book values were defined as the value of the asset recorded on the balance sheet,
510 as reported in Part VI of Schedule D of Form 990. For all the analyses included below, the book values
511 are summed from all the buildings and lands owned by the company.

512 In the following plots, we split the companies into groups (high, medium, and low) based on their
513 book values to visualize companies that had book values in a similar range. This makes trends more
514 clear because companies' book values are on such different scales, with some companies approaching
515 8×10^7 in book values, while others had less than 1×10^5 . Companies were divided into these three
516 groups based on the quantile of their building's book value in 2020.

⁵¹⁷ 6.3.2. Trends in Property Book Values (high/medium/low by quantile)

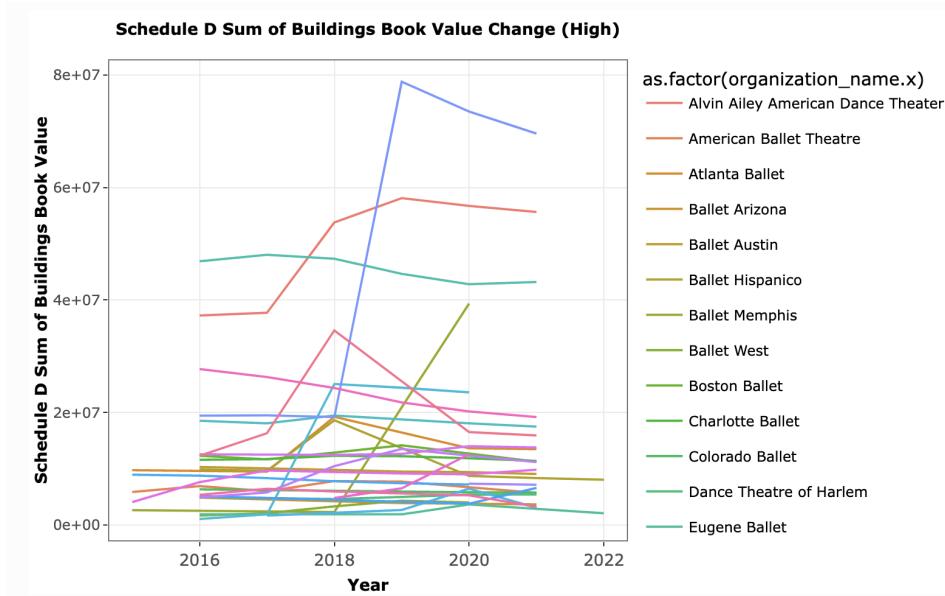


Figure 25

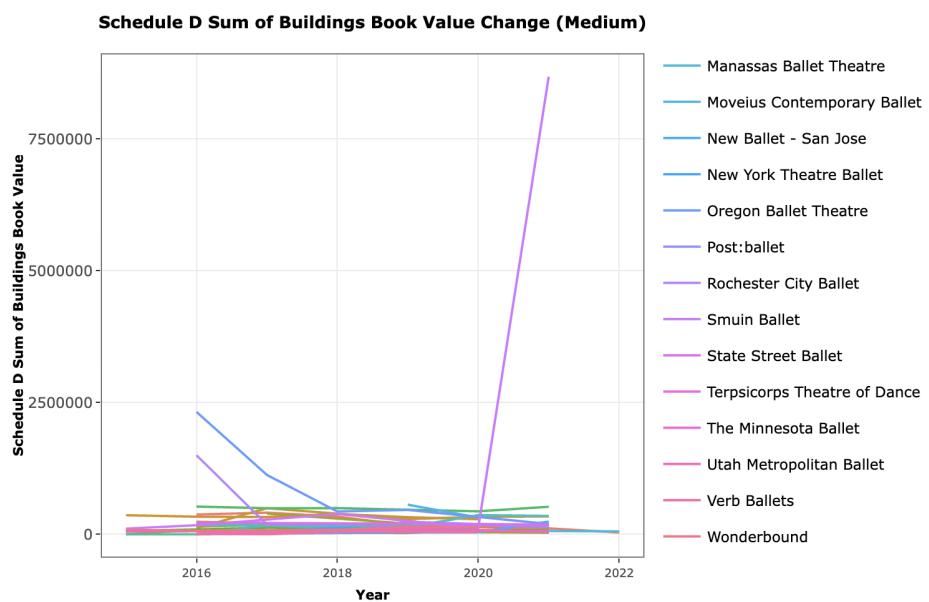


Figure 26

Schedule D Sum of Buildings Book Value Change (Low)

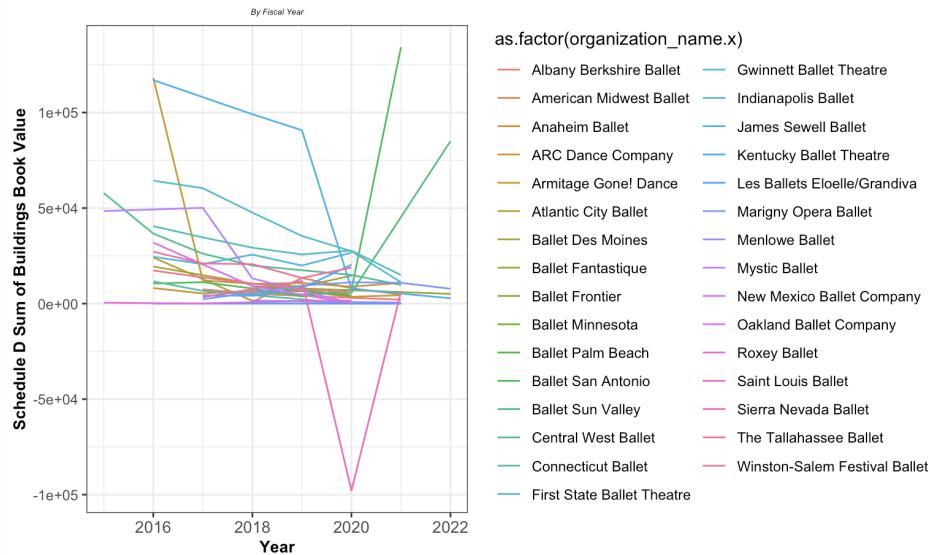
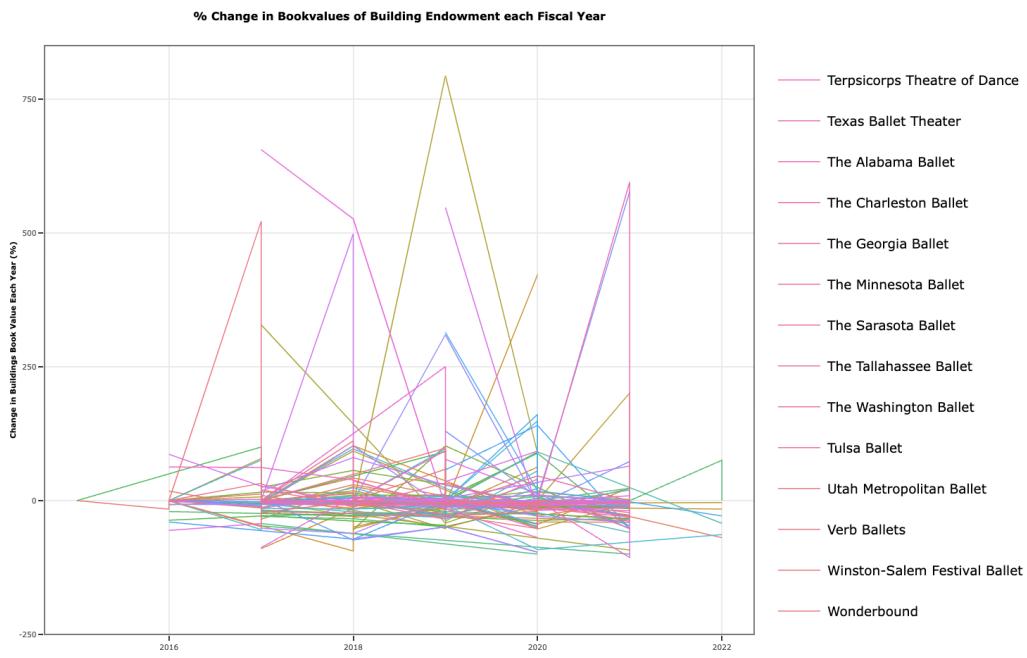


Figure 27

518 In Figures 25, 26, and 27, the percent changes in buildings' book values for each company from
 519 2014 to 2021 are presented. Companies with notable changes for each category are:

- 520 • Major: New York City Ballet, Ballet Memphis, Tulsa Ballet.
 521 • Medium: Smuin Ballet
 522 • Low: Saint Louis Ballet, Les Ballets Eloelle/Grandiva, Ballet Palm Beach

523 6.3.3. Percent change in Building Book Values



526 Most companies have decreased building book values over time except those companies that
 527 went through major changes in selling and buying buildings. The companies went through larger
 528 changes including Utah Metropolitan Ballet, Post:Ballet, Ballet Memphis, Philadanco, New Ballet San
 529 Jose, Sacramento Ballet, Marigny Opera Ballet, and Ballet Idaho.

531 6.3.4. Percent Change in Ranking

EIN	organization_name.x	year	change	BookValueSum
222587551	Island Moving Company	2017	Inf	166179
203447830	Boulder Ballet	2016	-3.390870e+04	85536
205888512	Collage Dance Collective	2021	9.567292e+03	695755
943197247	Smuin Ballet	2021	7.188102e+03	8681806
591837297	Florida Ballet Jacksonville	2021	5.812052e+03	1563324
311784286	BalletX	2018	3.496035e+03	797277
383945001	Cleveland Ballet	2021	2.000687e+03	58105
391134735	Milwaukee Ballet	2019	1.889604e+03	23903282
742371103	Ballet San Antonio	2021	1.763694e+03	134186
341645238	Verb Ballets	2018	1.652558e+03	47950
811657501	New Ballet - San Jose	2017	1.470690e+03	14576

532

533 6.3.5. Percentage change in book value by year

534 We can see from the mean that many extreme values exist in terms of changes in the building's
 535 book values.

536 7. Conclusions

537 7.1. Data Quality

538 As stated in the introduction, online reporting of tax returns by dance companies has facilitated
 539 this research; however, a long-standing issue with publicly-available tax reporting is there is no
 540 guarantee that mistakes are not made and published. Therefore, a significant part of our analyses was
 541 focused on checking the quality, completeness, and aberrations in values reported on the 990 forms.
 542 Many discrepancies were found indicating non-concordance concerning the end-of-year balances and
 543 beginning-of-year balances within the same year for many companies, where the values reported don't
 544 match indicating missing information. Additionally, values reported for previous years did not match
 545 what certain companies actually filed for those years with no apparent explanation. Many companies
 546 the capstone team reached out to for clarification did not respond. This issue should be addressed in
 547 future analyses. Implications for missing or inaccurate reporting on Form 990s and 990EZs include
 548 misinforming the public. Data analyses run on inaccurate information may also draw false conclusions
 549 about the financial practices of certain companies that don't really exist. Informing dance companies
 550 of the importance of proper tax reporting may help address these errors in the future.

551 7.2. Endowments and the S&P 500

552 Our analyses have demonstrated that the trends of the stock market, and particularly the S&P 500,
 553 heavily influence percent change in the endowments of many companies. Other companies perform
 554 very differently from the S&P 500. This indicates that companies significantly differ in their investment
 555 behavior. Some companies differ in their investment behavior. Some companies, such as Oregon
 556 Ballet Theatre and Aspen Santa Fe Ballet⁴, did not invest their endowments at all. Others, including
 557 San Francisco Ballet, Arizona Ballet, Joffrey Ballet, and Houston Ballet, saw substantial investment

4 Recall the note on Aspen Santa Fe Ballet mentioned earlier.

558 gains over the years that were analyzed. This has significant implications for the individual dancers
 559 employed by these companies in terms of compensation opportunities as well as job security. A
 560 company that does not earn investment income risks long-term operation deficits due to inflation and
 561 unforeseen expenses. Therefore, it is important to continue to examine changes in endowments for
 562 dance companies over time and clearly communicate these findings to the dance world.

563 *7.3. Employee and Volunteer Labor*

564 *7.3.1. By Geographical Region*

565 The most volunteer labor is used in the South, followed by the Midwest, followed by the West,
 566 then Mid-America, New England, and then the Mid-Atlantic. There are several possible explanations
 567 for trends in labor usage that are beyond the scope of what can be analyzed with Form 990 data. This
 568 indicates that a few things could be happening in the world of dance. First, in regions with high rates
 569 of volunteer labor, there may be a higher percentage of community engagement. This is especially
 570 true for companies such as Eugene Dance in Oregon from the West region, which reports a significant
 571 number of volunteers but generates significant community support for their productions. Secondly, in
 572 regions with high rates of employee labor, state, and local governments may subsidize compensation
 573 costs which increase companies' ability to hire and pay their employees. Since dance is known to be
 574 an industry with a disproportionate amount of unpaid labor, it is especially important to understand
 575 where and why these discrepancies occur.

576 *7.4. Compensation*

577 The fraction of compensation going to senior executives (i.e. their C-Suite employees) is generally
 578 consistent, with a median of close to 10% across all years on file. Future research should track trends
 579 of executive compensation throughout the pandemic since the (limited) data available showed the
 580 fraction going to C-Suite employees increased from 2020 to 2021.

581 *7.5. Building Values*

582 Additionally, the pattern of how dance companies use their building endowment is inconsistent.
 583 Further investigation is required to fully understand why and how real estate is used by these
 584 companies.

585 The wide-ranging impacts of these understandings may lead to greater awareness by unpaid
 586 and underpaid laborers in dance, accountability for dance companies, and more equity in the dance
 587 industry. The capstone team hopes this work motivates further investigation of dance companies'
 588 publicly available 990 data to better understand the financial performance and decisions of dance
 589 companies, as well as other companies in the performing arts.

590 **8. Limitations**

591 Our analyses were not without limitations. First, certain companies have discrepancies in their
 592 End-of-Year and Beginning-of-Year balances. End-of-Year balances were used to calculate the percent
 593 change in endowments of all dance companies, so some information may be misrepresented based
 594 on these discrepancies. Additionally, data on a finer time scale, for example at the monthly time
 595 scale rather than the yearly, would be more informative for studying how investments did over time;
 596 however, 990 Forms only provide this data annually. Another limitation of this work is the analysis of
 597 compensation. The Form 990 provides summarized information across total employees, along with
 598 some information about compensation to C-Suite executives. However, it is not directly clear from
 599 this data which of these employees are dancers, and as such, it is not clear how dancers are being
 600 compensated relative to other employees. Finally, a significant number of companies did not report
 601 their number of employees and/or their number of volunteers. This led to missing data that was left

602 out of the geographical and unpaid labor analyses. Nine states (New Hampshire, Vermont, Kansas,
 603 Wyoming, South Dakota, North Dakota, Montana, Hawaii, and Alaska) did not have any companies
 604 in this analysis.

605 9. Future Research

606 Because the IRS is [behind on releasing Form 990s](#), only data from a smaller subset of companies
 607 exists for 2021, which includes 29 companies in total. That said, the effect of the COVID-19 pandemic
 608 on all trends examined here is a crucial area of future research. Because the federal government issued
 609 billions of dollars in public subsidies, trends throughout the pandemic would be helpful to identify
 610 whether these subsidies helped those intended. Similarly, it would be interesting to see if the COVID-19
 611 pandemic has changed the way companies used and reported their building assets; lockdown policies
 612 that differ by state might change abilities to hold in-person performances, which means companies
 613 might shut down certain performance centers due to prolonged quarantine. To gain insight into how
 614 dance companies managed their properties throughout this period, future research on buildings' book
 615 values can be conducted after more data in 2021 and 2022 is available. Similarly, once Form 990s
 616 through 2022 are filed for these companies, future research can examine how endowments, wages,
 617 income, operations, and unpaid labor at dance companies have evolved throughout the pandemic.

618 10. NOT TO BE PUBLISHED: What We've Learned and Suggested Capstone Future Steps

619 10.1. Discrepancies

- 620 • Reporting of endowment values across years in Schedule D is not always consistent.
 Correspondence from companies the capstone team has heard from so far has indicated that the
 most recently reported values are correct, so the analyses were structured to take the most recent
 data available rather than the current-year reported value to be true.
- 621 • A limit of our current understanding of reporting endowment data is what companies mean
 when they report negatives. In particular, are negatives in the expenses erroneous, or do they
 indicate something meaningful? In some cases, taking the expenses to be positive makes the
 calculated end-of-year balance concordant with the reported end-of-year balance, but in other
 cases taking the expenses to be positive causes a discrepancy to arise. These nuances will be
 important to future analyses of Form 990 data, so clarifying what companies mean when they
 report negative values in expenses in Schedule D is a useful area for future work.
- 622 • Preparing emails to companies with these discrepancies is important, but very time-consuming,
 so allocating enough time if this needs to be done is advised. It took our team several days of
 labor to put together emails.
- 623 • It might be worth asking companies who skip reporting 990s in certain years why they do so
 because there were some gaps in filings.

637 10.2. Endowments Over Time

- 638 • Information can be best analyzed and assessed using comparable measurements, e.g. rankings
 and percent change, as endowment totals are widely varied between companies.
- 639 • Further, in plots that contain many different companies over time, it is difficult to tell the
 difference between companies. Plots in the future should contain either separate tables with
 a color key, highlighted outliers, or other means of communicating which line refers to which
 company.
- 640 • Endowments can be transferred between different entities (e.g. Aspen Santa Fe Ballet). It would
 be worth checking this for more companies, and figuring out the best way to examine the exact

648 transfer of funds.

- 649
- 650 • In the future, examining various metrics in finance for evaluating investment behavior, e.g.,
651 Sharpe's Ratio, or average performance, may provide a more comprehensive understanding of
652 companies' investment decisions.

653

 - 654 • More broadly, questions regarding the beginning of an endowment warrant further attention. In
655 particular, at what point does a company typically create an endowment? Is that based on the
656 size of the budget and years in business?

657 *10.3. Unpaid Labor*

- 658
- 659 • Geographical region is very important when considering how much volunteer labor is used.
 - 660 • It may also be interesting to analyze the companies with the largest endowments or net revenue
661 and how much they use volunteer labor.

662

 - 663 • It is unknown how the breakdown of the types of volunteers they have: those volunteers could
664 be dancers, or other individuals engaging in the various kinds of work needed to keep a dance
665 company going.

666 *10.4. Building Value Analyses*

- 667
- 668 • There is a substantial amount of variability in the trends in building book values over time.
669 Future work may evaluate specific companies with large changes and incorporate outside
670 information on what decisions these changes correspond to (for example, if there is a purchase of
a specific building for the company reported on their website or a news source).

671

 - 672 • It may also be interesting to study the relationship between changes in building book values and
673 a company's endowment size, revenue, or other variables reported in Form 990.

674 *10.5. Compensation*

- 675
- 676 • Studying the relationship between the gender and pay of C-suite employees throughout the
677 pandemic *and* by geographical region might be an interesting step once the 2021 990s are
678 published. However, this would require outside data, since gender is not reported on Form 990s.

679

 - 680 • It may also be interesting to look at how much employees are paid in various companies and
regions (not just C-suite ones).

681 *10.6. Pandemic*

- 682
- 683 • Once the IRS releases filings for fiscal years 2020, 2021, and 2022, looking into how the trends
684 presented here to change over the pandemic year will be informative for understanding how
685 dance companies fared financially throughout the pandemic and the choices they made to
navigate this tumultuous period.

686

 - 687 • When studying the impact of the pandemic, fiscal year *end date*, not just *end year*, should be
688 utilized for time series analyses, as a company whose 2020 fiscal year ends in March will have
689 gone through very different events within their fiscal year as a company whose 2020 fiscal year
690 ends in September.

691

 - 692 • Incorporating state-level COVID-19 policy information (e.g., restrictions on large gatherings, or
693 restaurant closures) may provide insight into how companies fared during the pandemic across
694 locations. This would affect companies' abilities to rehearse or perform throughout the pandemic.
695 Understanding how endowments and trends in volunteer/paid labor will be crucial for
696 understanding how the pandemic impacted dance companies.

697 10.7. Relating Endowment Work to DDP's Other Analyses

- 698 • Our work here focused strictly on Form 990 data, but DDP® has covered a collection of other
 699 topics on these dance companies. Relating metrics related to gender equity to compensation or
 700 endowment trends may be an interesting avenue for future exploration.
- 701 • For example, it would be interesting to examine the relationships between:
 702 – Endowment size and gender equity index
 703 – Unpaid labor utilization and gender equity index.

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 706 Elizabeth Yntema.

707 **Conflicts of Interest:** The authors declare no conflict of interest.

708 **Abbreviations**

709 The following abbreviations are used in this manuscript:

710 DDP® Dance Data Project
 711 IRS Internal Revenue Service

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