

State Government Earnings Discretion Analysis

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[Abstract] In this analysis, data spanning from 2008 to 2021 is utilized to examine the extent of earnings discretion exercised by state governments. The study encompasses both accrual and modified accrual basis discretion. Notably, North Dakota exhibits the least amount of discretionary accrual, whereas Rhode Island stands out for having the highest level of discretionary accrual. It is observed that both types of discretionary accrual, whether on accrual or modified accrual basis, tend to carry forward into the future. However, the tendency for modified basis discretionary accrual to carry forward is significantly stronger. To gauge modified basis discretionary accrual, the study measures other financing sources and uses. The findings suggest that states should duly consider this propensity when formulating their budgets.

[Keywords] government earnings discretion, accrual basis, modified accrual basis

Introduction

Financial reporting discretion is closely tied to accounting quality and is a key focus of many accounting research studies. One of the main challenges in studying discretionary accounting decisions is quantifying discretion itself. Numerous studies have explored ways to measure earnings management in for-profit settings, with notable contributions from Jones (1991), Leuz, Nanda, & Wysocki (2003), Roychowdhury (2006), and Cohen, Dey, & Lys (2008). Various facets of management characteristics, such as age, gender, and compensation structure, have been found to influence earnings discretion, as demonstrated by Harris, Karl, & Lawrence (2019), Neifar & Ajili (2019), and Chung, Firth, & Kim (2002). Other extensively studied factors affecting earnings management include ownership structure, the role of auditors, and the composition of boards of directors (Gul, Kim, & Qiu, 2010; Can 2019; Duchin, Matsusaka, & Ozbas, 2010).

However, there is a noticeable gap in research focusing on earnings discretion in the governmental sector, which has not been as thoroughly explored as its private-sector counterpart. Beck (2018) contributed to this area by developing a model of governmental discretion. Considering that the government employs both accrual basis and modified accrual basis accounting, the Beck (2018) model includes measures of earnings discretion for both accounting basis. This present research applies the Beck (2018) measures to analyze earnings discretion in state governments, thus enriching the somewhat underexplored field of government earnings discretion with a detailed state-level analysis.

Literature Review

Research on government discretion has not received the same amount of attention as for-profit company discretion, as we mentioned earlier. Existing research focused on discretion techniques, factors that motivate discretion, and factors that discourage discretion. Interfund transfers, compensated absence liability, and pension liability are common tools for government discretion.

Inter-fund transfers have been studied extensively as a tool for managing fiscal outcomes in municipalities. Felix (2014) found that transfers are used to manage the general fund balance towards zero, which can be perceived as a neutral and stable position. Both large surpluses and deficits can lead to political consequences or perceptions of mismanagement. Interestingly, the tendency to manage the fund towards zero is more prevalent in municipalities with more external oversight, as well as in municipalities with a strong-mayor form of government. Kido, Petacchi, and Weber (2012) identified two accounts (the compensated absence liability account and the unfunded pension liability account) that offered incumbent gubernatorial candidates flexibility for manipulation.

Elections, deficit avoidance, strict balanced budget rules, and fiscal stress are some of the motivating factors for government discretion. Kido, Petacchi, and Weber (2012) examined the influence of gubernatorial elections on the accounting choices of state governments. The researchers found that accounting decisions may be strategically manipulated during election years to present a more favorable financial picture of the state's finances. Beck (2018) found that municipalities use discretion primarily to avoid deficits. Balanced budget rules, widely implemented in states across the U.S., have been associated with certain fiscal actions. Costello, Petacchi, and Weber (2017) found that states with strict balanced budget rules not only address deficits by raising taxes and curbing expenditures, but also by selling public assets and transferring resources across government funds to close the budget shortfall. Given that changing tax and spending policies needs legislature approval, politicians are more likely to engage in asset sales and inter-fund transfers, in the period when the deficit is realized, but to alter tax and spending policies in the period immediately following the deficit. Eaton and Nofsinger (2004) concluded that pension plans in states under high fiscal constraints have low salary growth rate and high expected rate of return (ERR) assumptions that lower the required contribution. Similarly, Naughton, Petacchi, and Weber (2015) found that states' discretion to understate pension funding gaps is associated with periods of fiscal stress.

Pressures of professionalism and transparency discourage government discretion. Khumawala, Marlowe, and Neely (2014) explored the role of accounting professionalism and the adoption of Generally Accepted Accounting Principles (GAAP) in local governments. The study found that GAAP non-compliance was surprisingly common among larger local governments. It was suggested that for many local governments, the decision to adopt GAAP was a response to the pressures of professionalism rather than a rational response to political and economic motives. Gavazza and Lizzeri (2011) argued that the effectiveness of such discretion can depend significantly on the level of transparency.

Methodology

Data Collection

We manually gather yearly comprehensive financial statement data from each state's individual websites, spanning from 2008 to 2021. For our final regression analysis, we utilize data from 2009 through 2021, due to the requirement of lag data in our analysis.

Model Development

We employ the discretionary accrual model developed by Beck (2018), which is outlined as follows:

Total accrual=accrual basis net income minus modified accrual revenues less expenditure (1)

Total accrual= $\alpha + \beta_1(1/\text{population}) + \beta_2(\text{change revenues}^{\text{full accrual}}) + \beta_3(\text{total depreciable capital asset}$

$$\text{before depreciation}) + \beta_4(\text{net income}^{\text{full accrual}}) + \varepsilon \tag{2}$$

In these equations, all variables have been scaled by the population.

$$\text{Discretionary accrual} = \text{total accrual} - \text{total accrual predicted from equation (2)} \tag{3}$$

$$\text{Discretionary accrual} = \alpha + \beta_1(\text{Pre-discretionary accrual NI}^{\text{full accrual}}) + \beta_2(\text{net income}^{\text{full accrual}}_{it-1}) + \beta_3(\text{discretionary accrual}_{it-1}) + \text{year} + \varepsilon \tag{4}$$

In our analysis, both Net Income and its lagged value are incorporated into the discretionary accrual model. The year is included as a fixed effect in our regression model. Since discretionary accruals eventually reverse, this characteristic is taken into account by incorporating a lagged discretionary accrual factor into the model.

The discretionary accrual under the modified accrual basis is represented by the variable OFSU (other financing sources and uses), as obtained from the modified accrual basis financial statement.

$$\text{OFSU} = \alpha + \beta_1(\text{Pre-OFSU NI}^{\text{Modified accrual}}) + \beta_2(\text{net income}^{\text{modified accrual}}_{it-1}) + \beta_3(\text{OFSU}_{it-1}) + \text{year} + \varepsilon \tag{5}$$

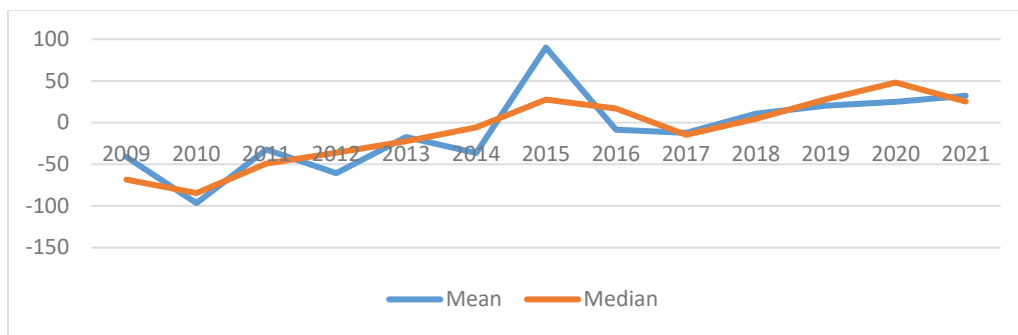
The analysis of discretionary accruals under the modified accrual basis aligns with the accrual basis discretionary accrual analysis. It incorporates net income, lagged net income, lagged discretionary accruals, and fixed effects for the year.

Results

We analyze discretion by year and by state. Discretion by year is adjusted by inflation. The results are illustrated in Figures 1 through 4.

Figure 1

Accrual Basis Discretionary Accrual by Year Adjusted by Inflation



The accrual basis discretionary accrual exhibits a slow and steady increase over the years. This trend is more consistent when viewed through the median. Since it is scaled by population, the pattern cannot be attributed to natural population growth. Figure 1 illustrates the progression of discretionary accrual over the years, with adjustments for inflation. Even in this adjusted view, discretionary accrual continues to display a gradual increase over time. Interestingly, the onset of Covid-19 towards the end of 2019 doesn't appear to have had a significant impact on the accrual basis discretionary accrual.

Figure 2
Accrual Basis Discretional Accrual By State

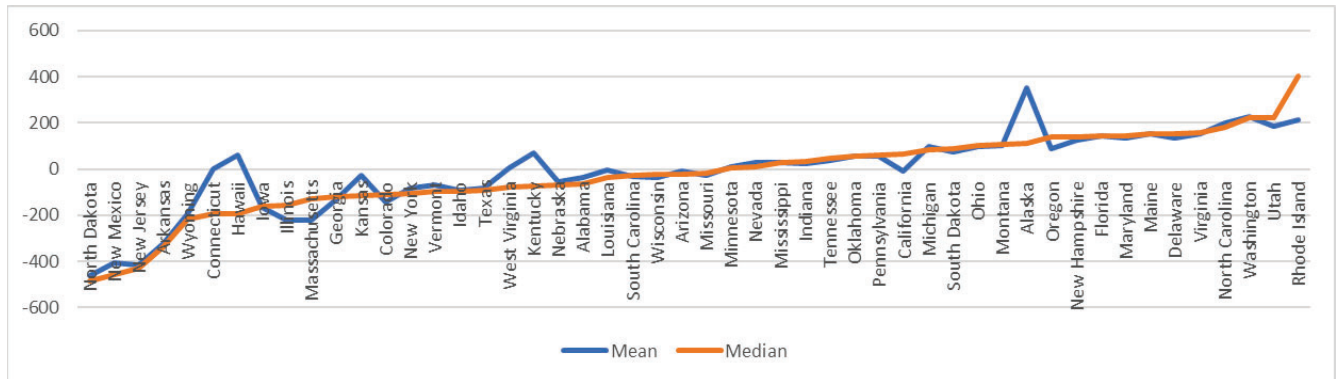
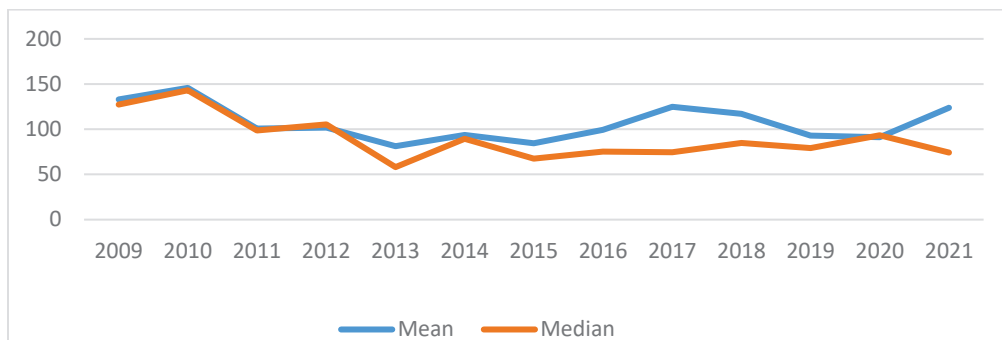


Figure 2 reveals that median accrual basis discretional accruals for the majority of states lie within the range of -200 to 200. Four states, North Dakota, New Mexico, New Jersey, and Arkansas are identified as having the lowest discretional accruals. Conversely, Rhode Island, Utah, Washington, and North Carolina stand out for having the highest levels of discretional accruals.

Figure 3
Modified Accrual Basis Discretional Accrual by Year Adjusted by Inflation



Unlike its counterpart, the discretional accrual under the modified accrual basis doesn't show an increase over the years. It started at a fairly elevated level in 2009 and 2010, then experienced a decline from 2010 onwards before reaching a stable plateau. Just as was observed with the accrual basis discretional accrual, the COVID-19 pandemic doesn't appear to have had any discernible impact on the discretional accrual under the modified accrual basis. Overall, the pandemic doesn't seem to have affected discretional accruals.

Figure 4
Modified Accrual Basis Discretionary Accrual by State

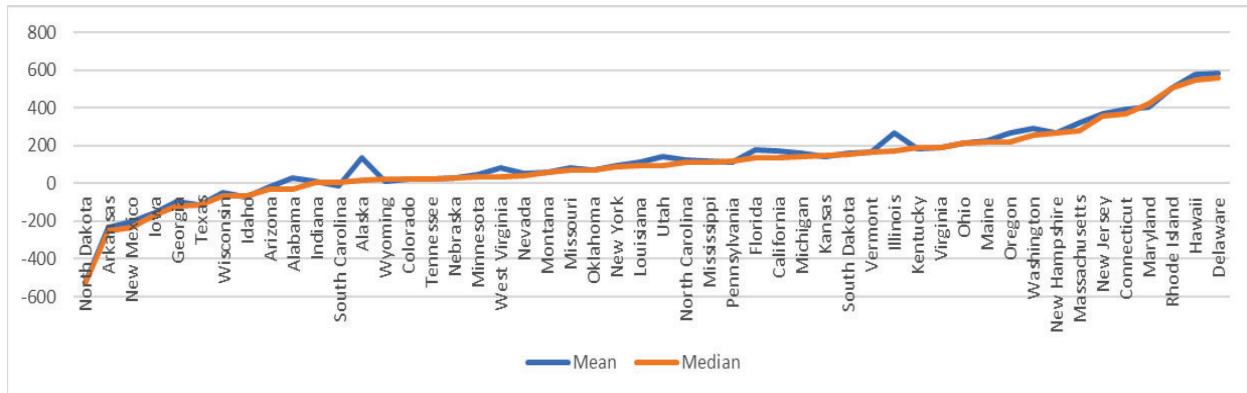


Figure 4 illustrates that North Dakota records the lowest discretionary accrual on both the modified and accrual basis. Following North Dakota, Arkansas ranks second in terms of the lowest discretionary accrual using a modified accrual basis, and fourth when an accrual basis is utilized. New Mexico and Iowa rank third and fourth lowest respectively when it comes to modified accrual basis discretionary accrual, as shown in the data. While under accrual basis, New Mexico and Iowa rank second and eighth lowest, respectively. New Jersey has the third lowest accrual basis discretionary accrual but sixth highest modified basis discretionary accrual. Overall, North Dakota, New Mexico, and Arkansas register the lowest levels of discretionary accrual. Additionally, Iowa also demonstrates a comparatively lower discretionary accrual. Rhode Island stands out as the only state that ranks in the top four for both modified accrual basis and accrual basis discretionary accrual. Specifically, it occupies the third highest position for modified accrual basis discretionary accrual and leads the chart for accrual basis discretionary accrual.

Delaware leads with the highest discretionary accrual on a modified basis and, also, ranks sixth highest on an accrual basis. In contrast, Hawaii, while holding the second highest position for discretionary accrual on a modified basis, falls to the seventh lowest spot for accrual basis discretionary accrual. Maryland ranks fourth highest in terms of modified accrual basis discretionary accrual and eighth highest for accrual basis discretionary accrual. Although Utah has the second highest accrual basis discretionary accrual, its modified accrual basis discretionary accrual is average. North Carolina ranks as the fourth highest state for accrual basis discretionary accrual, but its modified accrual basis discretionary accrual is average. Washington holds the third highest position for accrual basis discretionary accrual and ranks ninth highest for modified accrual basis discretionary accrual. Overall, Rhode Island emerges as the state with the highest discretionary accrual, while Delaware, Maryland, and Washington also show relatively high levels of discretionary accrual.

Table 1

*Accrual basis discretionary accrual regression analysis (Overall model fit: $P < 0.0001$
R-Square=0.1840)*

Parameter	Estimate	Standard	t Value	Pr > t
Intercept	778.1097	1267.3990	0.61	0.5395
InflationIndex	-637.5173	1031.7481	-0.62	0.5369
PreDiscretionaryAccrualNI	0.0500	0.0087	5.72	<0.0001
AccrualNI _{it-1}	0.0002	0.01134	0.02	0.9854
DiscretionaryAccrual _{it-1}	0.3353	0.0401	8.36	<0.0001

As Table 1 indicates, accrual basis discretionary accrual model has a significant overall fit. Approximately 18.4% of the variability in discretionary accrual can be explained by the independent variables included in the model. There is a significant positive correlation between accrual basis discretionary accrual and both pre-discretionary accrual net income and lagged discretionary accrual. Other variables do not have a significant impact based on their estimates and p-values.

Table 2

Modified Accrual Basis Discretionary Accrual Regression Analysis
Overall model fit: $P < 0.0001$
R-Square=0.5973

Parameter	Estimate	Standard	t Value	Pr > t
Intercept	-879.5261	643.6734	-1.37	0.1723
InflationIndex	751.7925	524.0418	1.43	0.1519
PreOFSUNI	0.0026	0.0044	0.61	0.5452
ModifiedAccrualNI _{it-1}	-0.0002	0.0055	-0.03	0.9771
OFSU _{it-1}	0.7929	0.0271	29.22	<0.0001

As illustrated in Table 2, there is a significant positive correlation between modified accrual basis discretionary accrual and the previous year's discretionary accrual. The model accounts for nearly 60% of the variance in modified accrual basis discretionary accrual. This suggests that the patterns of other financing sources and uses from previous years tend to continue into the future. Net income and lagged net income do not have significant impact on modified accrual basis discretionary accrual. Discretionary accrual under both accrual and modified accrual basis tends to carry over to the future; however, the tendency is much stronger for modified accrual basis discretionary accrual. While net income significantly increases accrual basis discretionary accrual, it does not have an impact on modified basis discretionary accrual.

Table 3*Accrual And Modified Accrual Basis Discretionary Accrual Correlation Analysis*Overall model fit: $P < 0.0001$

Adj R-Square=0.0980

Variable	Parameter	Standard	t Value	Pr > t
Intercept	-49.5369	13.2707	-3.73	0.0002
Modified accrual basis discretionary accrual	0.4212	0.0516	8.17	<.0001

Table 3 shows that 9.8% of the variance in accrual basis discretionary accrual can be explained by the modified accrual basis discretionary accrual. One unit increase in the modified accrual basis discretionary accrual leads to 0.42 unit increase in accrual basis discretionary accrual. Overall, the regression results indicate that accrual and modified accrual basis discretionary accrual have a significant relationship. However, there are many other factors not included in the model that contribute to the variability in the accrual basis discretionary accrual.

Conclusion

In our analysis of state government discretionary accrual over time and across states, we found interesting trends. Accrual basis discretionary accrual gradually increases over time, whereas modified accrual basis discretionary accrual stays relatively flat following a sharp drop in 2010. Among all states, North Dakota has the lowest level of discretionary accrual, with New Mexico and Arkansas trailing closely behind. Rhode Island stands out with the highest level of discretionary accrual. Delaware, Maryland, and Washington follow, also exhibiting high levels of discretionary accrual. These findings take into account the varying sizes of states as discretionary accrual is scaled by population. Both modified accrual basis and accrual basis discretionary accrual show a positive correlation with the previous year's accrual. However, the previous year's accrual has a much stronger influence on modified accrual basis discretionary accrual as compared to accrual basis discretionary accrual. As one might anticipate, there is also a significant correlation between modified accrual basis and accrual basis discretionary accrual. It is important to note that various additional factors are at play. It cannot be assumed that a high level of accrual basis discretionary accrual will always result in a high level of modified basis discretionary accrual, and vice versa. Conducting future research on the relationship between these two variables will yield valuable insights into how states make decisions regarding discretionary accrual and the specific types of discretionary accrual they opt for.

While our study provides insight into the patterns of discretionary accrual, we are not providing recommendations on the best practices for discretion. We are not taking a stance on whether higher or lower earnings discretion is superior. Our findings do indicate a strong tendency for modified accrual basis discretionary accrual to be carried forward, a trend that we believe states should be mindful of during their budgeting processes.

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