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Do Top Business Leaders Make Good Governors?

A Regression Discontinuity Design

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INTRODUCTION

Recently, a growing number of politicians with prominent business backgrounds are joining the battlefield of politics, running for key positions in offices. Donald Trump is the most recent example of a U.S. president who has constructed his own successful business empire before his political life. At state level, successful business figures have turned into politics and won governorship in different states. For example, Rick Scott, the 45^{th} governor of Florida, was the owner of Hospital Corporation of America and a venture capitalist, and Kevin Stitt, current governor of Oklahoma, was the founder, chairman and CEO of Gateway Mortgage Group. These candidates have successful executive experience as business leaders, while many of them have little or no experience in public offices prior to their governor tenure. Their professional career path distinctively contrasts with “conventional” career politicians who typically hold law degrees, start their career from legal affair positions, and climb up the political ladder gradually.

State governors are key actors in the budgeting process of the states. Governors are responsible for budget development and recommendation, in which promote their policy preference. Besides, they have line-item veto power on the state budget. In many states, state budget offices, which implements and oversees state government funds, directly reports to the state governor. Other state budget offices are also impacted by gubernatorial leadership and power, although they may be placed under other departments of the state (Thurmaier and Willoughby 2001).

This article fills the literature gap by answering the question of whether a state governor with prominent business experience (defined as "CEO governors" by Neumeier (2018)) causes the discrepancy of fiscal performance across the states. Since many unseen factors, such as political context of the state, could simultaneously impact the voters' preference of candidate and the policy preference of the elected officials, endogeneity is an issue to the research. To provide robust causal evidence, a regression discontinuity (RD) design approach has been implemented, using the data of state governor elections and state fiscal reports of 50 U.S. states of years from 1960 to 2010. The major finding of this article is that a governor with CEO experience causes worse fiscal performance of the state government, by having lower real total surplus, lower real general surplus, and lower operating ratio.

This research contributes to the current literature of both public administration and public finance. This study sheds lights on the leadership literature by providing evidence that the private sector experience of individual public officials could impact organizational performance, at least in the U.S. context. This research also contributes to the public finance literature that personal characteristic of elected officials plays an important role in the government financial performance at the state level.

The article is organized in the following structure. First, previous discussions on the public officials' business experience and governmental performance are reviewed. Second, major theories that supports the positive and the negative influence of public officials' business experience on fiscal performance are both introduced, and hypotheses are developed based on them. Third, data and statistic methods are described, including how the major independent variable of the research - the indicator of being a "CEO governor" is constructed.

Besides, the empirical method of regression discontinuity design is also introduced. The fourth part of the article reports statistical results and findings. Last, major discussion, conclusion, and future research recommendations are provided in the final section.

LITERATURE REVIEW

Empirical studies have analyzed the private sector experience of public leaders and its influences on economic, fiscal, and public service aspects of governmental activities. Overall, previous studies conclude that the business experience of public leaders is associated with fiscal performance (e.g., Avellaneda 2012; Whalley 2013; Jochimsen and Thomasius 2013), regional economic performance (e.g., Neumeier 2018; Szakonyi 2018), and the performance of public service provision at various levels of government (e.g., Avellaneda 2016; Olvera and Avellaneda 2019).

Fiscal Impact of Public Officials' Business Experience

Empirical results have demonstrated that the business experiences of both the elected officials and the appointed public managers are associated with governmental financial performance. Using the election data and the financial performance data of 475 California cities for fiscal years 1992-2008, Whalley (2013) explores the causal impact of appointed city treasures on municipal financial performance. Comparing to the elected officials, the appointed city treasurers typically have abundant business management experience. By conducting a regression discontinuity design (RDD), Whalley finds that switching from elected treasurers to appointed treasurers could improve city fiscal performance by saving their borrowing costs for up to 31%. Using panel data for 22 OECD countries from 1970 to 2004, Mikosch and

Somogyi (2009) explore the association between occupational backgrounds of country leaders and national budget deficit. They find that country government deficit is lower during the incumbency of politicians with private sector management experience. Avellaneda (2012) explores the relationship between Colombian mayors' personal attributes and municipal revenue generation capacity. By analyzing the data from Colombian municipalities from 1999 to 2005, the author finds that mayors with private sector experiences could expand municipal revenue size by attracting more state and national grants to their cities. Jochimsen and Thomasius (2013) explore the association between finance ministers' professional experiences and budget performance. By analyzing the data of German states from 1960 to 2009, they find that states tend to have a lower budget deficit when their finance ministers have a business sector working experience, especially for the corporate finance industry. However, a few studies find the business experience does not have a significant effect on the financial performance of governments. For instance, Beach and Jones (2016) explore the impact of the city council members' business experiences on municipal economic and fiscal performances. By conducting a RDD on the data of California city governments during the fiscal year 2001-2011, they find that the presence of city council members with prominent business experiences does not have a causal impact on city expenditures, revenues, and economic performance. Elected officials with prominent business experiences also show differential preferences on public spending categories. Using data of over 33,000 Russian mayors and legislators from 2007 to 2016, Szakonyi (2020) finds that politicians with prominent business experiences prefer expenditures that have immediate economic returns and direct benefits to business corporations (e.g., road and transportation) rather than expenditures on social programs (public health and education).

Economic Impact of Public Officials' Business Experience

The business experience of politicians is also discovered to be related to the economic outcomes of regions and countries. Gohlmann and Vaubel (2007) analyze the association between the professional backgrounds of central bankers and the countries' inflation levels using the data of 391 central banker council members of European countries from 1973 to 1998. They argue that council members' experience in private banking, private business, and central banks are negatively associated with national inflation rates. Dreher et al. (2009) analyze the association between the professional backgrounds of country political leaders and market-liberalization reforms using panel data from 72 countries from 1970 to 2002. They find that market-liberalization reforms, including reducing government size, increasing access to sound money, and loosening regulation, are more likely to occur during the incumbency of national leaders who are former entrepreneurs. Neumeier (2018) analyzes the relationship between U.S. governors' businessman background and state economic development performance. Using panel data of 50 states from 1960 to 2011, Neumeier conducts a quasi-experiment analysis (entropy balancing) and finds that the presence of a state governor who has a prominent business experience could promote state economic performance by increasing state income growth rates, increasing state private stock growth rates, and lowering state unemployment rates. Szakonyi (2018) analyzes data of 2,703 firms and over 12,000 sub-national politicians in Russia during 2004-2013 using an RDD. He finds that having business leaders holding political offices causes an improvement in total revenues and net profits of the firms that they have connections with.

The Government Performance Effects of Public Officials' Business Experience

A growing number of empirical studies examine the effect of public leaders' business experience on the performance of public service delivery. Gilmour and Lewis (2006) compare the performance scores of 234 federal programs in the fiscal year 2004 and find that the programs managed by political appointees, who have more working experiences in the private sector, have systematic lower performance scores in program management, strategic planning, and program outcomes than those managed by career executives promoted from the civil service systems.

For the non-U.S. contexts, Avellaneda (2016) explores the relationship between Salvadorian government chiefs' personal attributes and municipal performance using survey and archival data from 135 mayors. The results indicate that a mayor's private sector experience is not correlated with municipal utility service delivery performance and revenue generation performance. Instead, mayors' public sector expertise, public service motivations, and networking behaviors are the major predictors of public service performance. Jacqmin and Lefebvre (2016) analyze the data of professional experience of higher education ministers in 20 European countries from 2003 to 2010. They find that the private sector experience of a national education minister leads to a higher average academic ranking of the universities in that country. Recently, Olvera and Avellaneda (2019) find that the private sector experiences of state governors in Mexico have mixed effects on state government performance. By analyzing data of 32 Mexican states over 16 years, they discover that a governor's private sector experience is associated with a higher level of local public health provision but with a lower level of elementary education performance.

Research Gap

Although abundant research has illustrated the relationship between public officials' private sector experiences and government performance, several gaps exist. First, there are no studies that investigate the impact of public officials' private sector experiences on government financial performance at the state level or equivalent. Second, A couple of empirical studies have examined the various effects of public officials' private sector experience on government economic, financial, and public service outcomes. Yet very few studies focus on the top business leadership experience (presidents, vice presidents, CEOs). Third, it is important to note that many previous empirical studies failed to address the endogeneity problem of the election of public officials. Their empirical findings do not provide a convincing causal evidence about the impact of public officials' private sector experiences. To fill these above gaps, this research employs a rigorous quasi-experimental research design and attempts to explore the potential causal impact by American governors' top business leadership experiences on state government fiscal performance.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Theoretical Foundations: Upper Echelons Theory and Sector Imprinting Theory

Upper Echelons Theory

Upper echelons theory, proposed by Hambrick and Mason (1984), provides a theoretical framework on how personal characteristics of leaders impact organizational outcomes and how one could operationalize and measure leaders' personal characteristics. Upper echelons theory contends that the behaviors of chief executives are partly the consequences of personal attributes. The theory assumes that people act under bounded rationality with cognitive choices restrained by their personal backgrounds. Hence, the organizational outcome reflects part of the personal values and cognitive basis of the powerful actors in the organization (Hambrick and Finkelstein 1987). The two core parts of the theory are that (1) chief executives act based on their personalized interpretations of the strategic situation, and (2) these personalized interpretations are impacted by the executives' experiences, values, and personalities (Hambrick and Finkelstein 1987; Hambrick 2007). The first half of the theory contends that top executives' values, experiences, and personalities affect their information filtering and distortion, through impacting their vision, perception, and interpretation of messages. Through this process, the strategy and performance of the organization are impacted by the personal background of the leaders (Hambrick and Mason, 1984; Hambrick, 2007). The second half of the theory explains how to measure personal backgrounds. Contrary to using indexes (for example, Meier and O'Toole (2002) using salary level to estimate the quality of public managers), upper echelons theory proposes using personal characteristics to represent managers' quality and individual differences. These characteristics are age, career experiences, education, socioeconomic roots (gender, race, class, family backgrounds, etc.), functional track, financial positions (stock ownership in the company), and the degree of homogeneity of top leadership teams (Hambrick and Mason 1984). These factors represent the differences in values, personalities, and expertise of leaders. For private organizations, the strategic actions of a firm are the function of CEO characteristics, including age, tenure, formal education, and prior career experience. These factors could be further related to the performance of firms through impacting strategic choices, integrated values, and social behaviors (e.g., Wang et al. 2016; Talke et al. 2010; Boone and Hendricks 2009; Chin et al. 2013).

For public leaders, their personal characteristics are also associated with organizational performances and strategies. Professional experience is crucial to the success of public leaders and organizations. Government agencies with leaders who have longer experience in public agencies have demonstrated better fiscal and public service performance (Avellaneda 2012; Petrovsky and Avellaneda 2014; Olvera and Avellaneda 2019). Having more public sector experiences brings public officials the necessary skills, political networks, and social capital. All of these bring prosperity to organizations. Besides professional experience, leaders' age, gender, and education are found to influence various strategic actions of government and organizational well-beings, including policy orientations (e.g., Wilkins 2007; Avellaneda 2009; Meier and Funk 2017; Feeney and Camarena 2019), innovative and collaborative behaviors (e.g., Damanpour and Schneider, 2009; Esteve et al. 2012), risk-taking behaviors (e.g., Suzuki and Avellaneda 2018; Anessi-Pessina and Sicilia 2020) and governmental performance in education (Meier et al. 2006; Avellaneda 2008), public finance (e.g., Avellaneda 2009; 2016; Opstrup and Villadsen 2014), and municipal service provision (e.g., Avellaneda 2016).

Sector imprinting theory

Upper echelons theory provides a theoretical framework of explaining the relationship between leaders' personal characteristics and organizational outcomes. However, by itself, it is weak in illustrating the mechanisms of how personal characteristics taken into effect. As Hambrick (2007) suggests, both the personal characteristics and the decision-making results are visible and measurable, but the psychological and social process of how these characteristics affect individual choices is vague and cryptic. In the research of private sector management, imprinting theory provides an alternative to explaining how previous experiences impact individual decision-making. The term "imprinting" originates from biology (Immelmann 1975) and is later borrowed by business management scholars to describe the specific heritage that an organization left for itself in its life cycle. It is further developed to describe a process of how an organization, or an individual is impacted by the environment it was in, and how these impacts sustain effective in its future behaviors (Marquis and Tilcsik 2013). Imprinting appears at the individual level as the impact of how mentors, peers, and previous experience in the crucial time of the career leave residuals to individuals and guide their later behavior. The imprinting effect accompanies the individuals during the whole professional career (e.g., McEvily et al. 2012). Imprinting could be received from individuals, teams, organizations, and the environment. Imprinting affects the individuals and organizations by impacting their strategy selection, vision articulation, congenial learning, and capability building (Simsek et al. 2015).

The imprinting effect exists across different sectors. Public managers who have prominent private experiences tend to inherit their preferences and strategies from their private sector experiences (Boardman et al. 2010; Chen 2012). Unique to learning behavior which is coherent and self-selective, imprinting occurs unconsciously in the “sensitive period” (e.g. the founding period, the early stage of development, early career, or major success and failure) of the life cycle, and impacts individuals’ behavior in the future career persistently and unconsciously (Marquis and Tilcsik 2013). On one hand, success and failure in the business world are the most important lessons that one has learned being a politician with prominent business careers. These previous experiences are inherently rooted in their minds, and influence their decision-making in public offices, both intentionally and unintentionally. On the other hand, private sector experience constructs businessman politicians’ unique perceptions on government affairs and the government itself (Chen 2012). Public agencies have fundamental differences from private organizations in their environments, such as political context, goal ambiguity, and legal constraints (Rainey and Bozeman 2000; Boyne 2002). The sector difference of professional experiences could therefore cause diverse imprinting impacts to politicians with and without a business career. For example, the perceptions of “what is a good government” or “what means better performance for governments” may be different for politicians with or without business experience. Hence, businessmen’s leadership activities may contrast with traditional politicians or career civil servants, who have already developed their mindsets in public organizations (Chen 2012).

Hypothesis Development: Inferences on the Effect of Businessman Governors on State Fiscal Performance

The differences in public and private sectors form and shape different characteristics of career businesspeople and pure "career politicians". Their differences in policy preferences, political orientations, and management capacities emerge as the difference in policy outcomes when they are incumbent as governors. While the impact of the businessman governors on government fiscal performance is still not explicit, two distinct propositions are formed following the existing literature.

The Case for CEO governors' positive impact on state fiscal performance

First, CEO governors have a strong fiscal policy competence due to their extensive private sector financial management knowledge and skills. Governments have been under the pressure of pursuing efficiency and operate like business. In such case, experience from the private sector is a necessity to advancing the performance of governments (Box 1999). In similar political contexts, it could be expected that leaders' expertise in financial management is crucial to the fiscal performance of the government. Sector imprinting theory suggests that public managers could utilize their skills and expertise from private sector when conducting public sector jobs (Boardman et al. 2010). Governors with prominent business experience may have better capacities and skills in financial management, since they have more exposure to financial management of private sector. For example, Whalley (2013) finds that cities in California who have appointed treasurers have lower cost of borrowing comparing with those who have elected treasurers. In this example, expertise is the top priority in the selection of appointed treasurer. Many modern financial management and financing tools, such as performance budgeting, program budgeting debt issuing, contracting out, and public-private-partnerships, which demands adequate financing knowledge of decision makers, are originated from the private sector. Prominent business experience offers businessman governors abundant knowledge and competence in monitoring state fiscal performance. Their extensive private business experience may contribute to their better competence in maintaining program efficiency, managing state financial resources, and balancing budgets under budget constraints.

Second, CEO governors have a strong policy preference for enhancing government efficiency and fiscal discipline. CEO governors may have stronger support of efficiency and fiscal discipline of state government expenditures. The organizational incentive and organizational context are fundamentally different between public and private organizations. In the U.S. context, public organizations are publicly owned and financed, and regulated and supervised by legislative entities (Rainey 1983). Providing public goods and services is the main objective of public organizations. The effectiveness of government activities is often evaluated by public interests instead of financial performance (Rainey et al. 1976). Even though fiscal discipline has recently started to be recognized as one of the top priorities of governments, it is still not the single goal of government activities. Comparatively, the ultimate goal of private organizations is to gain economic returns and to thrive. Private sector managers are sensitive to fiscal irresponsibility because such behavior could threaten the survival of for-profit organizations. The contradictory values in the management context may contribute to the CEO governors' stronger preference of eliminating wastes and narrowing budget deficits. The profit-orienting experience reinforces CEO governors' perception of efficiency, while such experience is rarely seen on politicians with minimal business experience, who fostered their career in public and law sectors for the most part.

Third, CEO governors differ from career politicians not only regarding their policy preferences for promoting efficiency and fiscal discipline, but also in their willingness to implement initiatives and reforms to improve the fiscal stances of governments. CEO governors are less sensitive to the political resistance to budget cuts. Ideally, the politicians' policy positions are simply the reflections of voters' preference and partisan ideology rather than politicians' personal preference. Elected officials would comply with partisan ideology after they get elected (Downs 1957). This is often true when the elected official is originated from traditional party elites (Dalton 1985; Galasso and Nannicini 2011). When the governors are deeply rooted in the party, they are likely to stick with policy preferences that align to the fundamental ideology of the party. When legislators oppose the standpoint of governors in budgeting, traditional governors are less resistant to such political pressure. Comparatively, businesspeople candidates, especially those without political experiences, are "strangers" in front of party elites. They may refuse to comply with party elites or fundamental ideology of the party and tend to execute their own plan. For example, Witko and Friedman (2008) find that House members with some business backgrounds, especially those who have recently transferred their career from business to politics, vote significantly different from traditional career politicians without any business background. In the case of state budgeting, while state legislators back up expenditures that benefits their own voters, businessman candidates are less willing to compromise with those party elites, if those legislators are against budget cut initiatives.

Based on the above discussions on the relationship between the governors' business experience and state fiscal performance, hypothesis 1 is made here:

- *Hypothesis 1: All else being equal, governors' previous top business leadership experience has a positive effect on state fiscal performance.*

The Case for CEO Governors' Negative Impact on State Fiscal Performance

Public Choice Theory

The proposition that CEO governors may deteriorate state fiscal performance is based on two arguments. The first argument is developed from the public choice theory. The public choice theory argues that the major incentive of people making decisions is maximizing self-interest, regardless of whether they nominally serve the public interest or not (Buchanan and Tullock 1962). First, governors with prominent background may appropriate public interests to reimburse personal business returns. Politicians run for political offices when they perceive what they could gain from the position exceeds their pay out (Osborne and Slivinski 1996). Businesspeople have to invest overwhelming time and money to compete with career politicians, who are in advantage of political skills and resources. Simultaneously, businessmen need simultaneously keep their business career alive while campaigning and being incumbent. An additional legislation career dilutes their time and resources from their business world. Hence, participating election creates larger opportunity cost for businessman candidates than career politicians (Fiorina 1994). Enhancing their own business earnings could be an additional incentive for businessmen running for offices (Szakonyi 2018).

Second, governors with business background may manipulate public resource to benefit special business interest groups or relevant private industries. Government regulations impose additional cost to business transactions, which causes rent-seeking behaviors (Krueger 1974). Businesspeople could influence policymaking towards their preferences by either directly running for office or indirectly lobbying and financing other candidates. For businessman politicians, running for office is worthwhile when the payoff level of running for office is higher than the payoff level of indirectly influencing politics. In some transitional countries, businessmen run for legislative positions more frequently when institutional constraints are weaker, so that they have larger discretion of manipulating policy position to extend business interests (Li et al. 2006; Gehlbach et al. 2010). Businessman may treat running for office as a non-market strategy of improving profits of their associated industries, because it may be a less costly alternative of rent seeking. By exerting political power, businessman politicians' associated industries could obtain better reputation, more loans from bank, and more procurement from the government (Szakonyi 2018). Meanwhile, the strategies that benefit the certain industry, like providing tax incentives to or loosen regulation on their own industry may reduce the efficiency of government operation but could hardly be discovered by average voters.

Publicness fit theory

The second argument proposing the negative impact of governors' business experience derives from the publicness fit theory. As the major executive leader of state governments, a governor who has spent most of his or her career in private business is an "outsider" comparing with a life-long professional politician. An "outsider" leader is a chief executive who "brings a different leadership style, knowledge, skills, and perspective to a firm based on his or her previous experience in other firms and industries" (Karaevli 2007). For executives from outside organizations or industries, their cognitive frame and professional experience are alien to the new position comparing with those from the same organization (Bailey and Helfat 2003). While insiders are portrayed as being better fit to the organization, outsiders' degree of fit varies across identities and may cause unprecedented influence on organizational performance (Kesner and Sebora 1994).

The publicness fit theory argues that due to the uniqueness of public organizations (or in other words, "publicness"), the managerial experiences of managers have different degrees of matching with the features of public organizations. Private managers with skills and expertise solely in private sector management may not be able to handle well the unique organizational context of public organizations, such as public ownership, public funding or political control on public organizations (Petrovsky et al. 2014). In private organizations, outsider chief executives who have a poor "fit" of their expertise with their organizational context may deteriorate organizational performance (Karaevli 2007). Similarly, new incoming public managers who lack public experience in their expertises may also produce disruption to the organizational performance (Petrovsky et al. 2014). "CEO Governors", especially who recently turned into political careers, may be deficient in necessary skills and knowledge of managing governmental activities and maintaining political network. This could lead to poor fiscal performance of governments.

Based on the above discussion, the second hypothesis on the impact of governors' business leadership experience is made:

- *Hypothesis 2: All else being equal, governors' previous top business leadership experience as CEO positively has a negative impact effect on state fiscal performance.*

RESEARCH DESIGN AND METHDOLOGY

Regression Discontinuity Design (RD)

The major empirical approach of this article is a regression discontinuity (RD) design. To illustrate causal inference between the key independent variable and the dependent variable. Among all the state gubernatorial elections within the period, the result of the final stage of general election is the research focus. This research focuses on general elections in which one candidate has business experience and the other does not. In other words, I focus on the cases that the winner is a "businessman candidate" and the runner-up is not, or the runner-up is a "businessman candidate" and the winner is not. If there are multiple candidates in the final stage of the general election, only the candidates who are on the first and second position in the final poll are studied. Then, the margin of percentage of popular vote between the businessman candidate and the non-businessman candidate is calculated by the voting percentage of businessman candidate subtracted by that of non-businessman candidate. Obviously, if the businessman candidate wins the election, the value of this margin would be positive. Otherwise, it would be negative. In those elections with extremely close results, it could be argued that the final victory of the winning candidate is due to some randomness rather than other homogeneous driven factor. In that case, the assignment of businessman candidate as governor is random in the contests between businessman and non-businessman. Thus, it could be possible to infer the causal relationship between governors' businessman experience and fiscal outcomes.

The estimation of the relationship between governors' business experience and fiscal outcome is based on the following equation:

$$Y_{it+1} = \beta_0 + \boldsymbol{\beta_1 CEOCandidateWin_{it}} + \beta_2[f \cdot (CEOCandidate.Vote.\ Margin)]_{it} + \beta_3[CEOCandidateWin_{it} \times f \cdot (CEOCandidate.Vote.\ Margin)_{it}\ ] + \beta_4 X_{it} + \gamma\theta_i + \psi\omega_t + \varepsilon_{it}$$

The variable "$CEOCandidateWin_{it}$" is the treatment variable. It takes value one if a businessperson candidate won the gubernatorial election at state *i* and year *t*. Only governors who are in office more than half of the year are counted as the governor of the specific year. Besides, acting governors who succeeded the position due to the sudden resignation of previous governors are not counted, since they do not have election opponent when they swung in. The assignment variable "$CEOCandidate.Vote.Margin_{it}$" is the difference between the voting share of businessperson candidate and non-businessperson candidate. The variable $CEOCandidate.Vote.Margin_{it}$ enters the equation in the formation of function since the model is a polynomial RD design and the regression model of multiple degrees of polynomial would be tested. β_1 is the causal impact from whether the incumbent governor is a businessperson. When Business Governor equals to 1, the "discontinuity" occurs if there is a significant impact from β_1 to y, which is the regression of y on the margin of voting share, by moving the regression curve upward or downward by β_1 units. Besides, there is an interaction term $CEOCandidateWin_{it} \times f \cdot (CEOCandidate.Vote.Margin)_{it}$. It allows the slope differs between the cutoff point. The subscript i stands for the states, and the subscript t stands for the time. X_{it} is the state time-varying control variables (covariates). θ_i is state fixed effect. ω_t is year fixed effect.

Outcome Variables—State Fiscal Performance

Researchers have developed a wide variety of indicators about government fiscal condition, fiscal health, or fiscal performance. Yet, there is no consensus on the best measures of government fiscal performance. Recently, a growing number of empirical studies tend to use multiple indicators to measure fiscal performance based on the fiscal information extracted from the government Comprehensive Annual Financial Reports (CAFRs) (e.g., Jimenze 2019, 2020; Yu et al. 2020; Wei et al. 2020). In this present study, the sample consists of the period of 1960 to 2010. Because state CAFRs are not readily available prior to 2000, this research focuses on a widely accepted measures of fiscal performance—budget solvency. using alternative data sources from US Census of Bureau's Annual Survey of State Government Finance. Budget solvency is the degree to which the state will end the fiscal year in surplus or deficit. It is a core fiscal performance measures adopted by many scholars (Jimenze 2020; Yu et al. 2020; Bruce et al. 2020). Four indicators of budget solvency are utilized. The first one is state total surplus (000s), which is measured as total revenues minus total expenditures, scaled by state population. The second one is state general surplus (000s), which is measured general revenue minus general expenditures, scaled by state population. The third one is the ratio of total revenue to total expenditure, which is measured as total revenues divided by total expenditures. The fourth one is the ratio of general revenues to general expenditure, which is measured general revenues divided by general expenditures. It should be noted that the larger values the four fiscal indicators, the better the fiscal performance.

Treatment Assignment Variables—State Governors with CEO Experience

The treatment variable is a dummy variable indicating whether the governor is a "CEO Governor". The concept of "CEO Governor" is originated from research of Beach and Jones (2016) and Neumeier (2018). In this research, "CEO Governors" are those politicians who fall into at least one of the two categories. They either (1) have had experience of being employed as major executive personnel prior their governor incumbency, including presidents or members of executive boards (e.g. Ed Schafer, Governor of North Dakota from 1992 to 2000 and former president of Gold Seal Company in 1980s), vice presidents (e.g. Deval Patrick, governor of Minnesota from 2007 to 2015 and former executive vice president of Coca-Cola from 2001 to 2004), chief executive officers (e.g. Doug Ducey, incumbent governor of Alabama from 2015 and former CEO of Cold Stone Creamery from 1995 to 2007), or any other types of high-ranking managerial positions of private firms (e.g. Jon Corzine, Governor of New Jersey from 2006 to 2010 and the former CFO and senior partner of Goldman Sachs in 1990s), or, (2) they have been creators or owners themselves of private corporations or business prior to their governor incumbency, including but not limited to counseling firms, manufacturing corporations, equipment dealers, retail business, trade corporations, and catering and hotel business (e.g. Asa Hutchinson, incumbent governor of Arkansas from 2015 and the founder and owner of a consulting firm, or, Sonny Perdue, Governor of Georgia from 2003 to 2010 and the founder of an agricultural trading company). Self-employed private jobs, like private attorneys, pharmacists, physicians, as well as purely farmers or farm owners without any adjacent business, are excluded from the model (e.g., Jimmy Carter, Governor of Georgia from 1971 to 1975 and a farmer, or Howard Dean, the governor of Vermont from 1992 to 2002 and a physician). The variable is coded “1” if the governor of the year has that kind of “CEO” experience, otherwise coded “0” if the governor does not. To fulfill the prerequisite of regression discontinuity design, the businessman experience of governors’ election opponents is also coded in the same pattern. If the runner-up of the general election has “CEO experience” according to this standard, a variable of “opponents’ CEO experience” is coded “1”, otherwise “0”.

Control Variables

The control variables, including governors’ other individual characteristics, economic condition, and political context. Governors’ individual characteristics are gender, age, race, education, party affiliation, and whether the governor has any experience in political or bureaucratic offices. The economic condition variables consist of state real income per capita and unemployment rate. The political control variables include divided government (measures whether the state’s upper and lower house are controlled by different parties), share of Republicans in state house and senate, and citizen liberal ideology.

Data Sources

In this research, the unit of analysis is the state-year. The sample frame covers all 50 U.S. state governments from year 1960 to 2010. The data of fiscal performance, economic performance and states' socioeconomic backgrounds are obtained from US Census Bureau, US Bureau of Economic Analysis, and US Bureau of Labor Statistics. The data of governors' personal backgrounds are from both archival data and self-collection. First, governors' personal information other than business background are obtained from Book of the States, published by the Council of State Governments (CSG), and the archives of National Governors' Association (NGA). These personal background information are name, age, gender, race, political party, years of incumbency, and previous political experience. Second, the business experience of governors is self-collected. The major source of governors' business experience is archival data of the website of National Governor Association (NGA), and is cross-checked by information gathered from encyclopedias covering ballot information (e.g., Wikipedia, Ballotpedia, Vote-Smart), archival data of federal and state libraries, and prominent mass media (e.g., CNN, Washington Post, New York Times, etc.). The gubernatorial election data is from both the website of National Governor Association and the article of Neumeier (2018).

EMPIRICAL FINDINGS

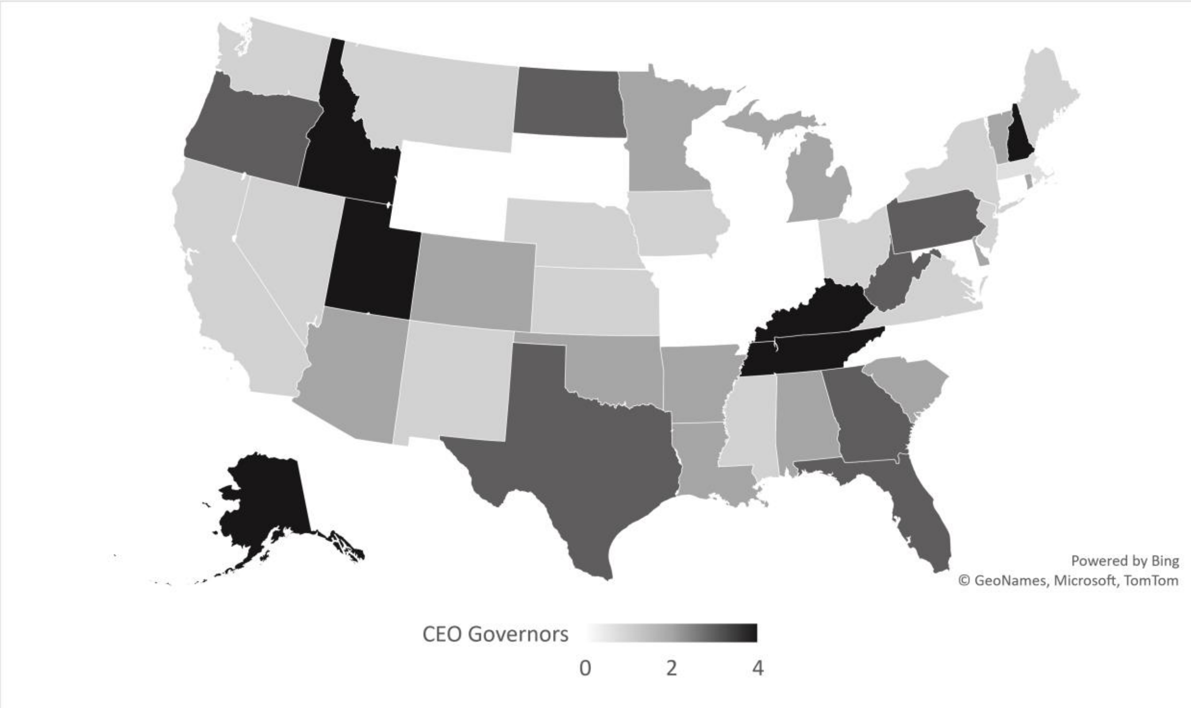
An Overview of State CEO Governors

During the period of year 1960 to 2010, there are 479 governors who have been in office as the governor of 50 U.S. States (only those who have been in office more than half a year are considered). Among them, 85 governors (17.75% of total) have experience as business executives (CEO) according to our definition. Alaska, Idaho, Kentucky, New Hampshire, and Utah have four CEO governors each during this time, which is the most of all the states. 50% of governors of Idaho and Utah are CEO governors, which is the highest by ratio. Connecticut, Hawaii, Illinois, Indiana, Maryland, Montana, North Carolina, South Dakota, Wisconsin, and Wyoming have no CEO governors during our sample period. These CEO governors leaded 18.73% of total years in these states. Table 1 ranks the number of CEO governors by states. Figure 1 provides the map of CEO governors by states. It can be easily seen that the number of CEO governors varies widely across states.

Table 1 CEO Governors by States

State	CEO Governors	Total Governors	% of CEO Governors	State	CEO Governors	Total Governors	% of CEO Governors
ID	4	8	50%	SC	2	11	18%
UT	4	8	50%	CA	1	7	14%
TN	4	9	44%	IA	1	7	14%
AK	4	10	40%	ME	1	8	13%
NH	4	11	36%	NY	1	8	13%
KY	4	12	33%	OH	1	8	13%
ND	3	8	38%	WA	1	8	13%
OR	3	8	38%	NV	1	9	11%
TX	3	9	33%	MT	1	10	10%
WV	3	9	33%	NE	1	10	10%
GA	3	10	30%	MS	1	11	9%
PA	3	10	30%	NM	1	11	9%
FL	3	11	27%	KS	1	12	8%
CO	2	8	25%	NJ	1	12	8%
LA	2	8	25%	VA	1	13	8%
MI	2	8	25%	CT	0	9	0%
AR	2	9	22%	HI	0	7	0%
AL	2	10	20%	IL	0	10	0%
DE	2	10	20%	IN	0	10	0%
OK	2	10	20%	MD	0	9	0%
VT	2	10	20%	MO	0	10	0%
AZ	2	11	18%	NC	0	9	0%
MA	2	11	18%	SD	0	10	0%
MN	2	11	18%	WI	0	11	0%
RI	2	11	18%	WY	0	9	0%
Total	85	479	18%	Total	85	479	18%

Figure 1 Map of CEO Governors by States



Assessing the Validity of RD Design

We check the validity of RD design before turning to the main results. First, Lee and Lemieux (2010) propose to check the key assumption that individuals cannot manipulate the treatment assignment variable or running (forcing) variable. Two graphical assessment of this assumption is provided in Figures 1 and 2. Figure 1 presents a simple histogram representing the distribution of margin of victory. There are many gubernatorial elections close to the cutoff point (0). More importantly, the number of close elections resulting in a businessman victory is approximately the same as the number of close elections resulting in a businessman loss. Figure 2 plots a discontinuous density function around the cutoff following McCrary (2008). It shows that the density just to the right of the cutoff is statistically indistinguishable. The formal McCrary (2008) test also indicates that there is no evidence of discontinuity around the threshold (*p*=0.2368) (See Appendix A)

Figure 2 Histogram of Margin of Victory (Businessperson Candidate Voting Share in a Gubernatorial Election)

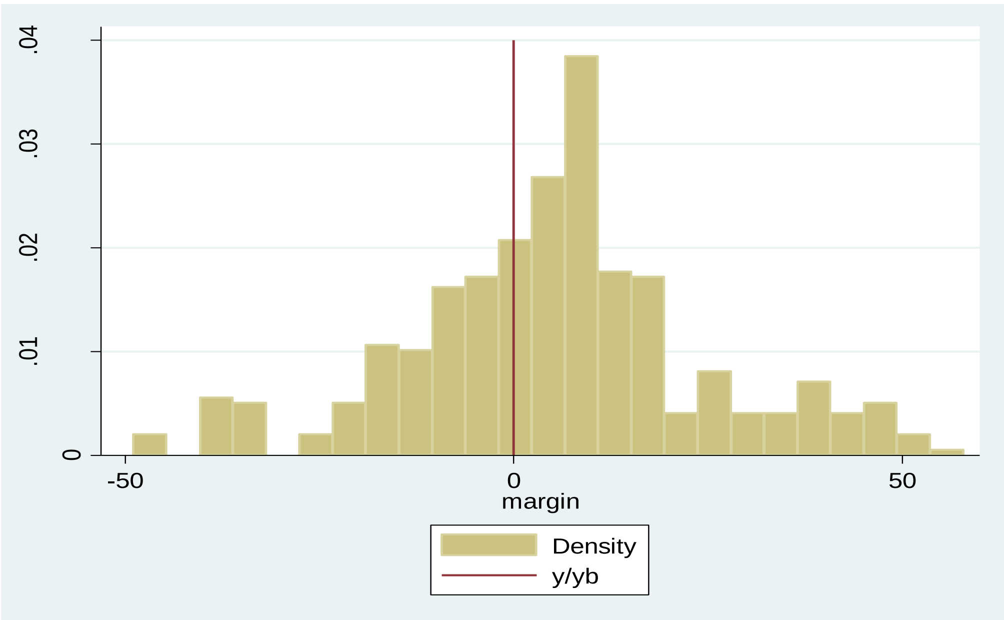
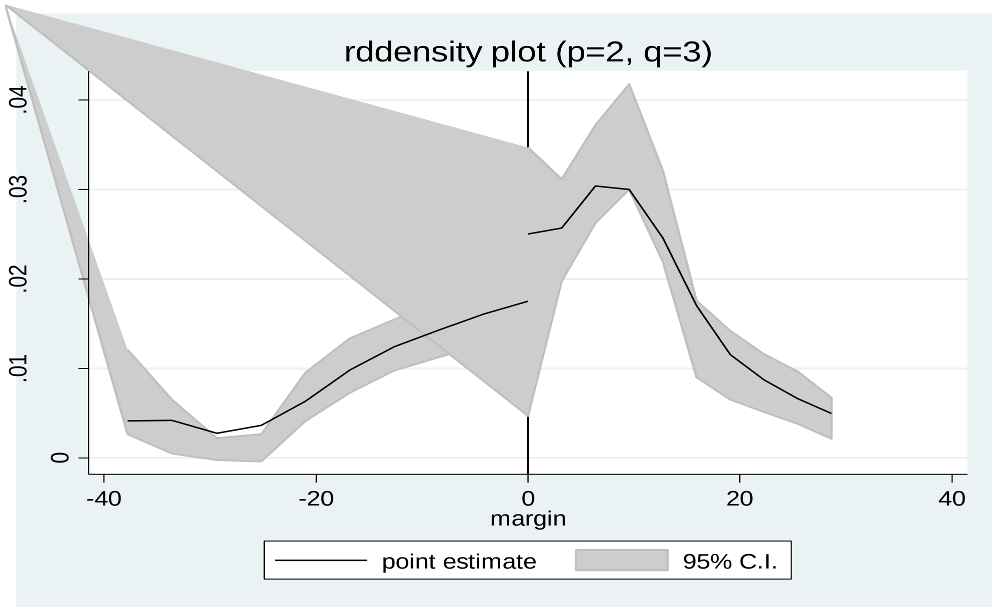


Figure 3 McCrary Density Plot of Margin of Victory (Businessperson Candidate Voting Share in a Gubernatorial Election)



A second key assumption for the RD design is the local balance of baseline covariates on either side of the assignment threshold. If the RD design is valid, then there should not be discontinuous jumps of covariates at the threshold (smooth around the cutoff). Following Lee and Lemieux (2010), we replace the fiscal performance outcome variables in Equation (1) with each of the pretreatment characteristics (covariates) to test this assumption. The findings suggest that a high degree of local balance around the assignment threshold.

Table 2 Check the Balance of Covariates Around the Cutoff

Variables	Coefficient	Std. Error
Pre-incumbency conditions (2 years prior to gubernatorial elections)		
Female	-0.002	0.006
Political Experience	-0.149	0.088
Age	0.341	2.299
Tenure	0.205	0.472
Republican	0.166	0.178
Business Education	0.236	0.152
Real Income Per Capita	0.47	0.475
Unemployment	-0.818	0.493
Divided Govt	-0.071	0.164
Republicans_State Senate	0.578	1.324
Republicans_State House	0.696	0.864
Citizen Liberal Ideology	-0.523	0.435
Population Density	0.412	0.625
Minority Pop %	-0.223	0.742
Urbanization	0.644	1.212
Population with College Degree or Above %	-0.344	0.721

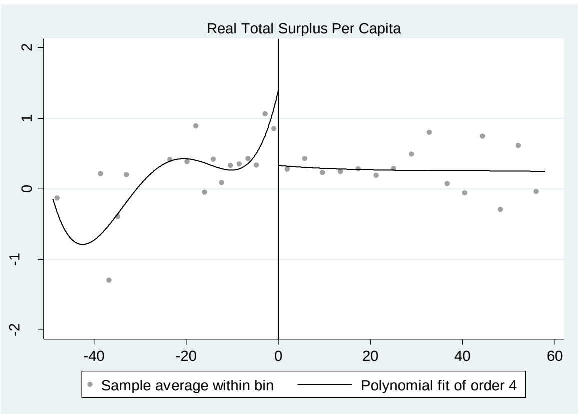
Main RD Results: The Causal Impact of Electing a CEO Governor on State Fiscal Performance

After confirming the validity of our regression discontinuity deign, we turn to the main research question: does the election of a gubernatorial candidate with business CEO experience impact fiscal performance? In the following sections, we offer two types of evidence to present our empirical findings: simple graphical results and regression analysis.

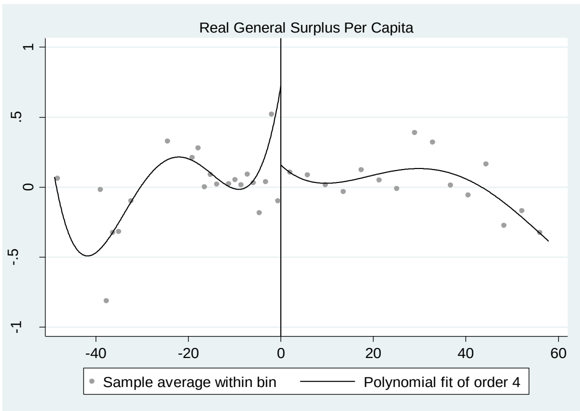
Figure 4 presents a scatterplot with local polynomial fits around the threshold. Figure 4(A) depicts the plot for real total surplus per capita. This plot shows a downward discontinuity just at the right side of the threshold (or cutoff) vertical line. Figure 4(B) presents the plot for real general surplus per capita. It indicates a downward discontinuity just at the right side of the threshold (or cutoff) vertical line. Figure 4(C) describes the plot for the ratio of total expenditures divided by total revenues. Again, it shows a downward discontinuity just at the right side of the threshold (or cutoff) vertical line. Finally, Figure 4(D) presents the plot for federal share of state total government revenue. Consistent with previous figures, it exhibits a decreased discontinuity just at the right side of the threshold (or cutoff) vertical line. In sum, all these four figures point to the decreasing fiscal performance in states with CEO governors compared with non-CEO governors.

Figure 4. Graphical RD Results (Binned Scatterplots): Causal Impact of Businessmen Victory on State Fiscal Performance Outcomes (Local Polynomial Fits)

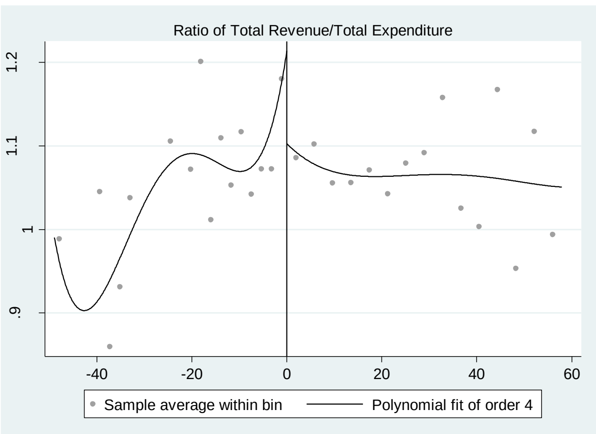
Panel (A)



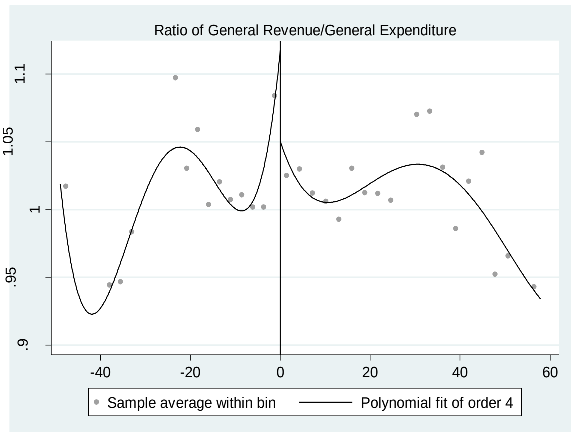
Panel (B)



Panel (C)



Panel (D)



Notes: “Businessmen margin of victory” is on X-axis in all panels. The variable is the businessperson’s vote share minus the competitor/opponent(non-businessmen) vote share. If businessmen margin of victory> 0, the businessmen has won. If businessmen margin of victory< 0, the businessmen has lost. All panels are binned scatterplots taking the binned average of different variables on the Y-axis.

Moving to the RD estimates, Table 3 reports RD coefficients and robust 95% confidence intervals for the local polynomial approach. In RD nonparametric approaches, the choice of bandwidths is important because these bandwidths define the weight assigned to each data observations. Therefore, following Calonico et al. (2017), this study prefers to present the RD estimates using mean square error (MSE) optimal bandwidths. Alternative optimal bandwidths are used as robustness checks. The results in Table 3 suggest that CEO experience negatively influences state fiscal performance variables. The RD coefficient, based on MSE optimal bandwidths (β = -0.912***; 95 percent CI [1.289; -0.536]), implying that real per capita total surplus in states with CEO governors is $912 dollars less compared with those of non-CEO governors. When looking at the CEO experience on real per capita general surplus, our result shows that states with CEO governors have a smaller amount of real per capita general surplus ($538 dollar less). Consistently, based on MSE optimal bandwidths, the RD estimate for CEO governors on the ratio of total revenue/expenditure is -0.101*** (95 percent CI [-0.172; -0.029]). This suggests that the ratio of total revenue/expenditure in states with CEO governors is 10% less compared with those of non-CEO governors. Finally, the RD estimate on the ratio of general revenue/expenditure is -0.062*** (95 percent CI [-[-0.111; -0.014]). This suggests that the ratio of general revenue/expenditure in states with CEO governors is 6.2% less compared with those of non-CEO governors.

Table 3 Local Polynomial RD Estimates (Without Covariates)

	Real Total Surplus Per Capita	Real General Surplus Per Capita	Ratio of Total Revenue/Expenditure	Ratio of General Revenue/Expenditure
RD Coefficient	-0.912***	-0.538***	-0.101***	-0.062***
Robust 95% CI	[-1.289; -0.536]	[-0.804; -0.271]	[-0.172; -0.029]	[-0.111; -0.014]
N	462	462	462	462
N-/N+	91/161	97/140	91/216	97/114
h	8.214	6.640	8.359	6.706

Notes: RD estimates computed using local polynomial methods with triangular kernel function. Bias-corrected robust estimators of standard errors developed by Calonico et al. (2014). N means total number of observations. *N-/N+* denotes effective number of observations at both sides of the threshold. *h* is the optimal bandwidth using the mean square errors (MSE).

*p<0.1, **p<0.05, and ***p<0.01.

To check our results' robustness to different model specifications, this research incorporates a set of covariates into the RD models. It should be noted that the inclusion of control variables, though not necessary for identification purposes, may help improve the precision of our RD estimates (Imbens and Lemieux 2008). Therefore, Table 4 presents the RD estimates with the inclusion of all covariates that might influence state fiscal performance. The point estimates are slightly different following the inclusion of additional control variables, but the results are qualitatively identical, giving us further confidence that we have identified a robust negative relationship between CEO experience and state fiscal performnace.

Table 4 Local Polynomial RD Estimates (With Covariates Included)

	Real Total Budget Surplus/Deficit Per Capita (2010 $)	Real General Budget Surplus Per Capita (2010$)	Ratio of Total Revenue/Expenditure (%)	Ratio of General Revenue/Expenditure (%)
RD Coefficient	-0.457***	-0.389***	-0.041***	-0.024***
Robust 95% CI	[-0.701; -0.213]	[-0.794; -0.09]	[-0.087; -0.026]	[-0.11; -0.031]
Covariates	Yes	Yes	Yes	Yes
N	462	462	462	462
N-/N+	91/85	91/73	97/206	97/73
h	7.073	6.991	6.720	6.476

Notes: RD estimates computed using local polynomial methods with triangular kernel function. Bias-corrected robust estimators of standard errors developed by Calonico et al. (2014). Covariates include gender, age, race, education, party affiliation, political experience, real income per capita, unemployment rate, and divided government, share of Republcains in state house and senate, and citizen liberal ideology. N means total number of observations. *N-/N+* denotes effective number of observations at both sides of the threshold. *h* is the optimal bandwidth using the mean square errors (MSE).

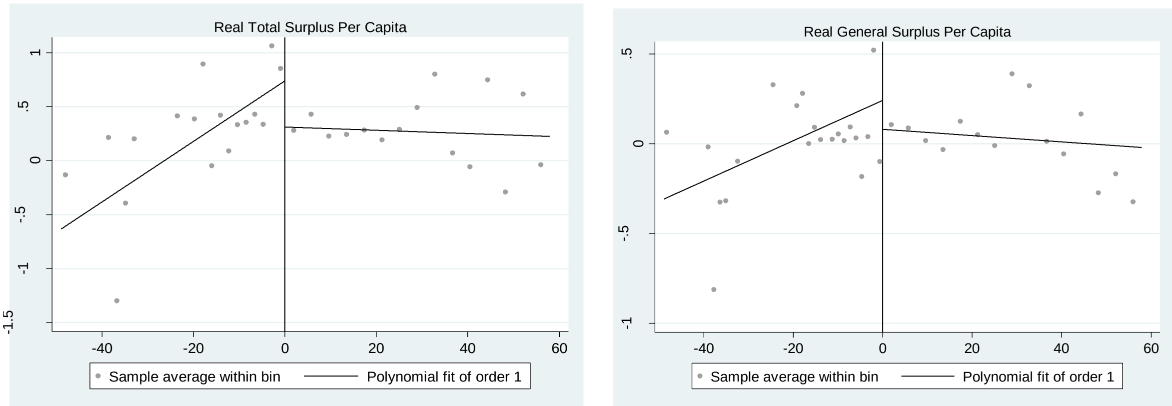
*p<0.1, **p<0.05, and ***p<0.01.

Robustness Checks

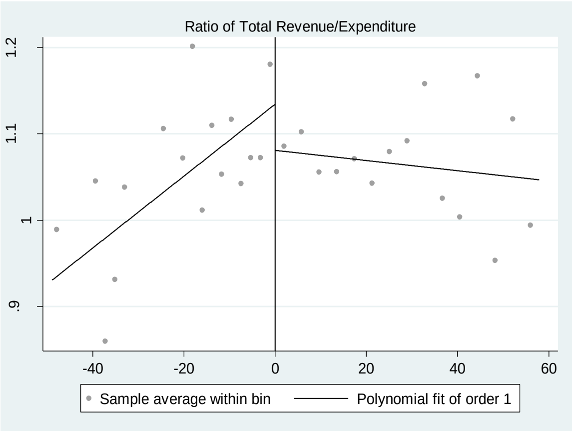
In addition to the results reported in Tables 3 and 4, this study also performs a series of tests to check the robustness of RD estimates. Figure 5 presents the alternative RD estimates based on a local linear polynomial approach. The alternative RD estimates using Epanechnikov kernel functions, Uniform kernel functions, and coverage error rate optimal bandwidth (CER) remain unchanged. These results are available upon request.

Figure 5. Graphical RD Results (Binned Scatterplots): Causal Impact of Businessmen Victory on State Fiscal Performance Outcomes (Local Linear Fits)

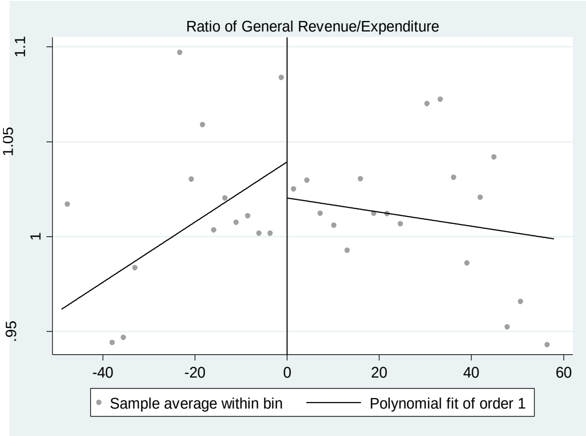
Panel (A) Panel (B)



Panel (C)



Panel (D)



DISCUSSION AND CONCLUSION

This research analyzes the causal impact of governors' CEO business experience on the fiscal performance of American state governments. In doing so, this study brings together the multiple theoretical insights from upper echelons theory, sector imprinting theory, public choice theory and publicness fit theory. Our findings point to the negative effect of governors' business experience on the state fiscal performance. These results are robust to alternative model specifications and have important implications.

From the theoretical perspectives, two major reasons may be behind the causal mechanism of CEO governors' negative impact on state fiscal performance. First, CEO governors may have better competence and skills in managing private business. However, as suggested by the publicness fit theory, governments have distinct organizational contexts and contrast in many extrinsic and intrinsic factors with private ones. Private sector experience and skills may not perfectly match the complex public sector environment. Second, public choice theory argues that personal interest is the fundamental incentive of politicians' choices. In order to benefit their business interest, CEO governors may empower themselves from governor's authorities when they are incumbent. As Szakonyi (2020) suggests, many businessman politicians run governments "for business" instead of "like business", by unevenly distributing public funding to business interests that they have connection with. Since such manipulation of government resources is often out of supervision and accountability, it may cause the deterioration of the fiscal performance.

This study makes three key contributions. First, to the best of our knowledge, the relationship between the fiscal performance and businesspeople politicians in US politics has not been empirically studied. This research fills this gap by investigating the association between the incumbency of US state governors with a business CEO background - and a state's fiscal performance. Second, this research contributes to a growing branch of studies that examining the influence of public officials' personal characteristics on policymaking and policy outcomes. This research illustrates that the systematic differences in politicians' personal identities and professional backgrounds do matter for governmental performance, at least in the U.S. context. Third, this study also makes a novel methodological contribution by using an RD design to identify the causal impact of public leaders' CEO experience on the fiscal performance of public sector. To date, little research has utilized RDs in the public management studies. Recent scholars have called for the use of rigorous causal inference in the public management research (Dague and Lahey 2019; Alonso and Andrews 2020).

Sum Statistics

Variables	N	Mean	SD	Min	Max
Total Budget Surplus ($1,000)	2500	2.61	0.66	-5.31	9.08
General Budget Surplus ($1,000)	2500	1.02	0.46	-1.27	3.07
Total Revenue/Total Expenditure %	2500	1.07	0.11	0.24	2.25
General Revenue/General Expenditure %	2500	1.02	0.06	0.76	1.37
Business CEO Governor	2500	0.12	0.33	0	1
Businessperson Margin %	462	5.20%	19%	-48.94%	57.90%
Female	2500	0.05	0.21	0	1
Political Experience	2500	0.91	0.29	0	1
Age	2500	52.84	7.88	33	78
Year in Political Office	2500	4.01	2.58	1	16
Party Republican	2500	0.79	0.67	0	1
Education Business BA Degree	2500	0.19	0.43	0	1
Divided Govt	2500	0.51	0.50	0	1
Personal Income Growth %	2500	2.33	2.89	-13.84	39.30
Unemployment Rate %	2500	5.95	2.07	2.30	17.40
Gini Coefficient %	2500	52.29	6.02	40.97	70.88

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