REGIONAL & URBAN ECONOMICS
PUBLIC POLICY RESEARCH
GAMING & HOSPITALITY
REAL ESTATE ADVISORY
FINANCIAL ADV ISORY

COLLECTIVE BARGAINING ANALYSIS: NEVADA STATE EMPLOYEES

PREPARED FOR:

LAS VEGAS METRO CHAMBER OF COMMERCE

APRIL 2019

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April 1, 2019

Mary Beth Sewald
President & CEO
Las Vegas Metro Chamber of Commerce
575 Symphony Park, Ste. 100
Las Vegas, NV 89106

Re: Collective Bargaining Analysis: Nevada State Employees ("Study")

Dear Mary Beth:

RCG Economics LLC ("RCG") was asked by the Las Vegas Metro Chamber of Commerce ("the Client") to provide certain economic and fiscal advisory services related to the subject analysis.

Our Understanding

The Client retained RCG to assess the potential impact on Nevada state government expenditures of establishing collective bargaining for state employees. We understand that our report might be used by the Client's government affairs team in its discussions with state legislators during the recently started 2019 legislative session.

Independence

We do not warrant the results or outcomes of our research on engagements, and our fees are not contingent on the findings in the Study. As such, RCG is an independent advisory firm.

Confidentiality

Our personnel understand that they are subject to, and will abide by, any reasonable confidentiality restrictions. In addition, we have treated as confidential, documents or other information made available to us in connection with this engagement. We have taken the appropriate steps to segregate all material related to our work in this engagement from other files in our office.

Standard Assumptions & Indemnification

Our work was performed according to the *Standard Assumptions & Limiting Conditions* detailed in the Attachment to this letter.

The Client agrees to indemnify RCG, its partners, principals and employees, and hold them harmless from and against any and all liabilities or obligations (including, but not limited to, attorney's fees) that arise directly from the RCG's services that are the subject of this consulting agreement, except to the extent that RCG's conduct was grossly negligent or fraudulent, and that such conduct was the proximate cause of any injury for which RCG is sought to be held liable.

It should be noted that we cannot make any representations relating to the accuracy of any of the third-party data we obtained and assembled on your behalf that is part of this agreement.

Regards,

RCG Economics LLC

RCG Economics LLC

Attachment
Standard Assumptions & Limiting Conditions

1. RCG prepared the Study from third-party information we collected as well as our ongoing research, document library, databases and sources.

2. The Client is responsible for representations about its plans and expectations and for disclosure of significant information that might affect the ultimate realization of the Study results.

3. The results of RCG's review apply only to the effective date of our review. The success of the Client's plans will be affected by many related and unrelated economic conditions within a local, regional, national and/or world context. We assume no liability for an unforeseen change in the local, regional or national economies. Accordingly, we have no responsibility to update our report for events and circumstances occurring after the date of our review.

4. The Study is based on third party economic and business information and data. Thus, variations in the future could be material and have an impact on our review conclusions. Even if the Study's observations about the future were to occur, there will usually be differences between the estimated and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material. These could include major changes in economic and fiscal conditions; and/or terms or availability of financing altogether; and/or major revisions in current tax or regulatory laws.

5. If the Study is reproduced by the Client, it must be reproduced in its entirety.

6. RCG makes no representation or warranty as to the accuracy or completeness of the third-party information contained in our review, and shall have no liability for any representations (expressed or implied) contained in, or for any omissions from, our materials.

7. The working papers for this consulting assignment will be retained in RCG's files and will be made available for your reference. We will be available to support the Study as required.

8. Unless otherwise stated herein, no effort was made to determine the possible effect, if any, of future Federal actions, including any economic, fiscal, environmental policy matters or interpretations thereof.

9. We did not perform an audit, review or examination or any other attest function (as defined by the AICPA) regarding any of the third-party information used or included in the report. Therefore, RCG does not express any opinion or any other form of assurance with regard to the same, in the context of our review.

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I. EXECUTIVE SUMMARY

RCG Economics LLC ("RCG") was retained by the Las Vegas Metro Chamber of Commerce ("LVCC") assess the implications of adopting collective bargaining for state employees in Nevada. This report is the culmination of our research.[1] In this report, we first (Section II) discuss the pros and cons of collective bargaining by reviewing a series of case studies that are for, neutral and against such a policy. In Section III, we perform a quantitative analysis to estimate the hypothetical cost to the state of Nevada of collective bargaining.

We would like to note that there seems to be little debate among researchers and analysts who have studied the collective bargaining issue that government costs will increase. The debate generally focuses on what the policy response should be. Should government raise taxes, should it reallocate spending from other areas to accommodate the additional costs or should it do a combination of tax increases and spending reallocations?

The Study is comprised of two complementary sections:

- Case Studies
- Fiscal Costs

Section II: Case Studies

In the Case Studies section, RCG reviews nine reports on collective bargaining. Three papers are supportive of the policy, three are neutral and three are critical of collective bargaining.

The papers in support of collective bargaining argue that unionization's benefits outweigh its costs, which they say are overblown by collective bargaining's detractors. They also find that states with collective bargaining have larger state deficits and that collective bargaining does not exacerbate poor fiscal policy at the state level. Additionally, they claim that collective bargaining tends to raise incomes across the economy and, therefore, a boon to all workers in a state.

The neutral position papers examine various characteristics of collective bargaining. For example, they find that public sector union membership has been growing since the 1970s, when private union membership began to decline. Another paper found that union wages have risen over time, even when private wages

[1] The Nevada Legislature is currently debating the merits and drawbacks of Senate Bill ("S.B.") 135, which would create mandatory collective bargaining for state employees.

have stagnated. The third report found that more anti-union legislation was enacted by states since the start of the Great Recession.

The anti-union papers all touch on the same subject: the costs of collective bargaining to governments and taxpayers. They generally find that collective bargaining does in fact lead to higher government costs, both at the state and local government levels. One of the reports delves into public collective bargaining's effects on how governments dealt with revenue shortfalls in the aftermath of the last recession.

Section III: Potential Fiscal Impacts

In the second section, based on our literature search, RCG estimated the additional potential cost to the state of Nevada if mandatory collective bargaining for state government employees were adopted, as would be the case with the passage of S.B. 135. As a secondary analysis, we also analyzed the effect on local government spending of collective bargaining.

The main source for the expenditure data used herein was the Annual Survey of State & Local Government Finance from the U.S. Census Bureau. The methodology we used to develop our final set of estimates followed one paper in particular.[2] Using this methodology, we produced a set of estimated and refined cost ranges and reported one as the "best estimate" (see Table I-1).

Based on the research and modeling described herein, we estimated that the incremental cost/expenditures to the state of Nevada of implementing mandatory collective bargaining for state workers could eventually reach $579 – $596 per Nevada resident ("per capita") per year over time, measured in inflation-adjusted 2012 dollars. This potentially results in $1.70 billion to $1.75 billion per year of additional state government expenditures, a 6.9 – 7.1 percent increase over FY 2016 state government spending levels. Our analysis also indicates that it would take approximately 20 years to reach the $579 – $596 level.

Table I-1: Nevada-Specific Results: Increased Government Spending from State Worker Collective Bargaining

Model Specification (Per capita, per year)	State of Nevada, only	Total (State + Local)
NBER Incremental Model Change	$658 – $791	$840 – $931
Mandatory Bargaining Model Change	$445 – $459	$615 – $667
All Compulsory Laws Model Change ("Best Estimate")	***$579 – $596***	***$624 – $764***
All Compulsory (Per Year)	**$1.70 B – $1.75 B**	**$1.83 B – $2.25 B**

Source: RCG Economics

[2] Lawrence, Geoffrey and Sherk, James and Kevin D. Dayaratna and Belt, Cameron. How Government Unions Affect State and Local Finances: An Empirical 50-State Review (April 11, 2016). Available at: http://report.heritage.org/sr178

II. CASE STUDIES

A. SUMMARY

Numerous studies, white papers, etc. have been published on the subject of public sector unionization and collective bargaining in recent years, usually containing one of two clear conclusions. Perhaps as a product of our increasingly partisan society, economists and political scientists who are presented with the same data, frequently diverge on their interpretation. The Great Recession ("the Recession") and its aftermath have brought this divergence into stark relief. There is no question that there was significant pushback against public unions and collective bargaining when private sector unemployment was spiking and states all over the country were instituting austerity measures. These measures included limiting collective bargaining agreements, waging public relations campaigns against unions, freezing pay and workforce reductions. Where the sides diverge is on how necessary this pushback was, and what the future holds for public sector unions.

We have reviewed herein a number of studies featuring varied viewpoints, summarized for readability and featuring salient quotes from each. Several of the post-Recession papers include particular focus on Ohio and Wisconsin, two union-heavy states that saw significant attempts at reform in the aftermath of the Recession. Nevada's own 2011 and 2015 reform efforts are frequently included as well. The studies below are divided into three sections: "pro" papers, arguing that public sector collective bargaining has either negligible or net-positive fiscal effects; "neutral" papers that focus solely on gathering and presenting a variety of data; and "anti" papers, which focus on analyses that indicate collective bargaining is a significant risk to state and local governments.

These studies are a sample of the work reviewed, and many of them are recent papers from scholars who have been studying labor issues, and collective bargaining specifically for years. James Sherk, of the Heritage Foundation, has penned a number of papers on modern unions and the economic benefits of right-to-work laws. Richard B. Freeman, currently a professor of economics at Harvard University, has widely-cited papers on unions dating back to the 1980s. Thom Reilly, Chancellor of the Nevada System of Higher Education, has been studying the public sector for decades. The Great Recession, and the many policy shifts that followed, provided academics and economists a new opportunity to dig into the many questions surrounding public sector collective bargaining. A selection of the most recent papers are summarized below, and a bibliography of various works researched for this study follows the Conclusion.

B. PRO-COLLECTIVE BARGAINING

In the aftermath of the Recession and faced with mounting deficits, state and local governments were looking to cut costs drastically. Employee pay and benefits, much of it bolstered by union contracts negotiated under collective bargaining, were looked at as a significant source of "fat" to cut. However, proponents of collective bargaining frequently sought to separate criticism of public sector unions from the Recession, asserting that the collapse of the housing market and subsequent stock market decline had nothing to do with unions; and that union members—and their pensions—felt the sting like everyone else. The following studies examine criticisms of unions in the years following the Recession and attempt to demonstrate that public sector collective bargaining has not been a source of fiscal crisis for states. In fact, they go even farther, suggesting that contracts resulting from collective bargaining are actually a rising tide that benefit all workers and residents across a government's economy.

The War against Public Sector Bargaining in the US[1]

This paper focuses on the history of political and legislative pushback against collective bargaining in the aftermath of the Recession. It includes analyses of state deficits and debt-to-GDP ratios, broken down by collective bargaining strength and union density. After gathering these data, the authors grant that strong collective bargaining laws can correlate with high costs for states:

> *"We conclude that states that have stronger collective bargaining laws or higher public sector union density have modestly higher deficits, whose statistical significance varies with model specification, and have higher debt-to-state GDP ratios, whose economic interpretation depends on the uses to which the states put the borrowed money."*

These higher deficits, however modest, weighed heavily on the minds of lawmakers trying to ride out the Recession. The paper presents data suggesting that public unions reacted responsibly to the Recession and endeavored to be conscientious partners with states confronting dark fiscal times. Although union bargaining agreements may have presented governments with challenges entering the Recession. The authors note several agreements states and unions reached across the country, including pay freezes, raise deferrals, and increases in employee benefit contributions. The authors posit that public sector union bargaining actually left more room for negotiation and cost savings, without resorting to harmful measures like layoffs:

[1] Freeman, Richard and Han, Eunice. The War against Public Sector Collective Bargaining in the US, (2012). Journal of Industrial Relations. Available online at: https://journals.sagepub.com/doi/10.1177/0022185612442279

> *"In sum, collective bargaining produced sizable union concessions during the states' fiscal crisis. We do not have sufficient data on unilateral state and local government reductions in wages or benefits in locales without collective bargaining to determine whether the savings in labor costs were larger or smaller in the presence of collective bargaining than in its absence. Given that unions had negotiated wages and benefits above those that would prevail in a nonunion market, they had greater room for making larger concessions and may have done so."*

The Assault on Public Sector Collective Bargaining: Real Harms and Imaginary Benefits[2]

This paper from the American Constitution Society gathers an extensive collection of research in defense of collective bargaining. It begins with an overview of public sector union history and is followed by an exploration of the reasons given for curtailing collective bargaining in the aftermath of the Recession. The following passage remarks on the relationship between state deficits and collective bargaining:

> *"For example, Texas, which has essentially no public sector collective bargaining and very low levels of unionization, has one of the worst budget deficits in the nation.* ***Nevada*** *(bolding added), which has no collective bargaining rights for state employees, has one of the largest state budget deficits in the country. In contrast, some states with strong public sector bargaining laws, including those at the center of these debates, have smaller than average deficits. Wisconsin was projected to have a deficit of 12.8 percent of its budget in FY 2010, Ohio 11 percent, and Iowa 3.5 percent."*

The report also examines common criticisms of collective bargaining, and finds their data lacking in context. For example, when comparing raw wages between the private and public sectors, the author asserts that it is a mistake to simply use an average pay figure because education and age are important factors when examining wages.

> *"Specifically, over half of state and local government employees in New England have a four-year college degree or more, and 30 percent have an advanced degree. Only 38 percent of private-sector workers have a four-year college degree or more, and only 13 percent have an advanced degree. Also, the typical state and local worker is about four years older than the typical private sector worker. After adjusting for these factors, public sector wages were generally lower than private sector wages."*

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[2] Slater, Joseph E. The Assault on Public Sector Collective Bargaining: Real Harms and Imaginary Benefits (June 2011). Available online at: https://www.americanbar.org/content/dam/aba/administrative/labor_law/meetings/2011/annualmeeting/015.authcheckdam.pdf

Following these rebuttals is an examination of public sector pension funds in states. The author allows that under-funding of these accounts is a legitimate concern, though overblown by critics of unions. Finally, the author examines legislation that has been proposed to curtail public sector unions in states like Wisconsin and Ohio, before making the broad claim that "restricting public sector unions is bad policy:"

> *"State deficits are not caused by public sector bargaining rights. Multiple studies have shown that, after adjusting for type of worker and type of job, most public sector workers are underpaid compared to their private sector equivalents. While some public sector pension funds have real funding problems, these are not generally the fault of collective bargaining. This is true in part because in the vast majority of states, public sector unions (unlike private sector unions) are not legally permitted to negotiate over pension benefits. It is also true because other factors—notably the stock market crash of 2008 and some questionable actuarial assumptions—are the main causes of the funding problems. The radical and reactionary amendments to public sector statutes some states have adopted will thus not help budgets, but they will hurt working people and public services."*

Getting It Right: Empirical Evidence and Policy Implications from Research on Public-Sector Unionism and Collective Bargaining[3]

Authored by a wide collection of pro-labor academics from around the country, this paper endeavors to show that public sector unions with collective bargaining rights actually improve the states they reside in, producing efficiencies and advantages beyond what the private sector can provide. For example, when considering the effects of public sector unions on low-wage employees, the authors point to empirical research, which includes data from states across the nation and the federal government:

> *"Unions and collective bargaining tend to raise the pay of less educated employees in lower-paid occupations, thereby reducing pay differentials and income inequality within industries and across the economy."*

The paper features extensive sections on shortfalls in public sector pension benefits ("Most state and local pension funds have been seriously misrepresented in public debates"), and the effectiveness of various labor-management relation tools (strikes, arbitration, etc.). Most interestingly; however, the authors cite

[3] Lewin, David and Kochan, Thomas A. and Cutcher-Gershenfeld, Joel and Ghilarducci, Teresa and Katz, Harry C. and Keefe, Jeffrey and Mitchell, Daniel J. B. and Olson, Craig A. and Rubinstein, Saul A. and Weller, Christian E., Getting it Right: Empirical Evidence and Policy Implications from Research on Public-Sector Unionism and Collective Bargaining (March 16, 2011). Available at SSRN: https://ssrn.com/abstract=1792942 or http://dx.doi.org/10.2139/ssrn.1792942

several instances in which breakthroughs in productivity were accomplished through the bargaining process, including in fire, police and sanitation unions.

In early 1980s New York, the local sanitation union reached an agreement with the city that included a reduction in crew size on each garbage truck, with a bonus for each employee. This agreement encouraged cooperation between the union and the city leading to improved technology and labor practices such that the same services could be provided by fewer employees. Not only was this endeavor successful, it produced many 'best practices' of refuse collection, like standardized trash cans, side-loading automated collectors and the requirement that cans be placed curbside:

> *"These examples show that highly unionized public-service work forces and collective bargaining do not stand in the way of service-enhancing innovations and may in fact positively contribute to them. It is therefore especially notable that these developments also occurred during certain periods of fiscal adversity that featured hard, sometimes adversarial bargaining over police and firefighter pay and conditions of employment, including instances of pay freezes and cuts. Nevertheless, the parties to these labor-management relationships have not allowed short-term fiscal adversity to deter them from the longer-term goal of improving protective services provided to the citizenry, whether achieved through or apart from collective bargaining."*

C. NEUTRAL

The following papers focus specifically on identifying factors that led to the growth and decline of private sector unions, before and after the Recession. As opposed to studies that draw a clear conclusion on the advantages or disadvantages of union reforms, the "neutral" studies we reviewed typically focus on the causes and effects of changes in labor law and how they affect public sector unions. Here is a sampling.

Union Membership in the United States: The Divergence between the Public and Private Sectors[4]

While private sector union membership has been in almost constant decline since the 1970s, public union membership grew sharply at the same time and has been remained relatively steady. In an extensive study on the differing fortunes between private and public sector unions in recent American history, the author endeavors to identify specific factors that led to these outcomes. This includes analyzing differences

[4] Farber, Henry. Union Membership in the United States: The Divergence between the Public and Private Sectors (2005). Princeton University Industrial Relations Section.

between types of bargaining agreements, categories of unions and the possible effects of union agreements on private sector wages. Though written pre-recession, this study provides clear historical context on how and why public unions have thrived:

> *"On balance, unions in the public sector have thrived relative to unions in the private sector for important structural reasons. Lack of market competition for the products of the public sector and lack of fiscal discipline through the political process makes the value of unions to public sector workers relatively high. Public policy governing labor relations in the public sector, working in conjunction with these structural factors, has provided an environment in which unions can thrive."*

There is, however, one noteworthy curiosity in this study, regarding states where employers have a duty to bargain:

> *"The estimates in column 3, for union workers show, surprisingly, that earnings are substantially lower for union workers where the employer has a duty to bargain[5]. Clearly, the duty to bargain is required in states where union workers are relatively well paid. But within states and within type of worker across states, union workers whose employers have a duty to bargain tend to earn 4 to 8 percent less than otherwise similar workers where there is no legal requirement. This is a puzzling finding."*

It appears that if both the employer and union are required by law to sit down and bargain in good faith, some uncertainty is removed from the equation. There is less potential for a lapsed contract or strike, which would be potentially detrimental to both parties.

Public Sector Compensation in Local Governments[6]

Notably written before the Recession, this study examines the effects of unionization in the public sector on wages and budgets across 120 governmental bodies, including both counties and cities. Organizations surveyed were questioned about multiple factors that contribute to their fiscal health, including responses to budget shortfalls, number of full-time employees, employee health insurance contribution and much more. For example, public union wages are juxtaposed against both those of the private sector and the Consumer Price Index ("CPI"); union wages see continual growth, unlike the private sector which shows fluctuation more in line with the CPI. Regarding the difference in compensation, the authors note:

[5] "Duty to bargain" refers to an employer's obligation under state or federal law to bargain with the designated union of their employees"
[6] Reilly, Thom and Schoener, Shaun and Bolin, Alice. Public Sector Compensation in Local Governments (March 2007). Review of Public Personnel Administration, Vol. 27, No. 1. Available online at: http://roppa.sagepub.com

> *"In recent years, there have been many studies comparing the compensation levels of public sector employees to those of private sector employees. Although this area has been the focus of considerable research, there is little consensus about whether pay differentials exist and whether these differentials are justified. Local governments need to determine whether their compensation practices rely too much on internal equity rather than on the market to determine the value of jobs and examine how public sector compensation compares to the private sector to determine whether any differential between the two is justified."*

The authors' recommendations, calling for additional research and for local governments to pay close attention to issues, such as unfunded pension obligations, would prove all too relevant as the Recession started. From the conclusion of the paper:

> *"The reality of permanent fiscal constraints on government (whether as a result of changes in economic conditions or imposed spending and revenue limitations), coupled with the escalation of wages and benefits in the public sector (compared to the private sector), will result in serious ramifications if not addressed proactively. As the public becomes increasingly aware of the increased cost of employee wage and benefit packages, the reality that many public pension programs are underfunded, and the extent to which governmental services are being reduced or eliminated, appropriate local government responses to public questions and criticism will be critical. Although these issues can be politically explosive to confront, ignoring them may have more serious ramifications and result in widespread public anger and hostility."*

Labor's Last Stand? The Great Recession and Public Sector Collective Bargaining Reform in the American States[7]

Described by the author as a "bird's eye view" of the legislative battles following the Recession, this paper identifies patterns across thousands of labor-related bills around the U.S. between 2007 and 2014. This is useful for context—to help understand the sentiment and narrative currently around union rights. It finds that as the Recession set-in, significantly more anti-union legislation was enacted by states. Furthermore, this sentiment could be traced to several state characteristics:

> *"I find that during the recession, negative state fiscal characteristics related to budget reserves, underfunded pensions, housing prices, and unemployment rates contributed to more intense "anti-labor" reform agendas."*

[7] Wade, Magic M. Labor's Last Stand? The Great Recession and Public Sector Collective Bargaining Reform in the American States, (August 2015). University of Minnesota.

For example, when looking at the various state declines in the Housing Price Index ("HPI")[8], states with higher price depreciation saw an increase in anti-labor bills introduced by anywhere from two to 11 times. The same pattern held true for high unemployment rates and low balances in budget reserve funds. The author suggests that the multitude of data point to a rather nuanced conclusion: economic factors alone do not account for the post-Recession union reforms, though neither does partisanship:

> *"In sum, this project indicates that the Great Recession ushered in a new, more precarious era for public employee unions in the United States. This is a significant development, given that influential unions representing government employees had come to operate as political insiders, particularly at the state and local levels. As such, I suggest that several factors will continue to impact the political influence of public sector unions—and negotiating power of public employees along with them. These are union density, union strategy, the legal playing field, public opinion and state fiscal conditions."*

D. ANTI-COLLECTIVE BARGAINING

For opponents of collective bargaining, the facts are clear. Most members of public unions are paid at a higher rate than equivalent employees in the private sector, including during times of economic crisis. While the private sector workforce can adapt quickly to a rapid economic downturn, union-bargained protections for public employees have the potential to bloat government budgets. Collective bargaining agreements can include benefits like unfunded retirement obligations, which have reached levels some consider untenable. Critics assert that without limiting the power of unions—or keeping them limited—by restricting collective bargaining, costs to government and, ultimately to taxpayers, could balloon with disastrous consequences in the future.

Public Sector Unions and the Rising Costs of Employee Compensation[9]

This study examines the cost of employee compensation by state and local governments and attempts to discover how much of those costs are tied to the presence of public sector unions with collective bargaining power: "Examining state and local compensation is important because it represents a major portion of the overall U.S. economy. In 2008, the total cost of wages and benefits for state and local workers was $1.1 trillion, which was half of the $2.2 trillion in total spending by state and local governments." This report is based on extensive analysis, modeling and comparison between states of varying levels of union density and

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[8] From the study: "House Price Index Changes from the 2006-2008 peak were calculated using HPI Index Data from the Federal Housing Agency."

[9] Edwards, Chris. Public Sector Unions and the Rising Costs of Employee Compensation (2010). Cato Journal, Vol. 30, No. 1.

average compensation. Using inflation-adjusted 2008 dollars and employment levels, the author finds that union membership does have a significant impact on a state's spending:

> *"In sum, the results indicate that the union compensation premium for public sector workers may be less than the union premium in the private sector, as other studies have indicated. However, the data indicate that public sector employees are well compensated in general, and so an eight percent premium represents a substantial and unneeded additional cost to taxpayers."*

The study also explores additional costs to states brought on by expansive public sector unionization and collective bargaining, including unfunded pensions and related scandals such as corruption or fraud. But in his conclusion, the author makes an additional argument that the fiscal impact of public sector collective bargaining goes beyond dollars and cents. By giving public employee unions the power to influence policy and contracts, states become far more likely to spend lavishly on items that would benefit public employees instead of residents as a whole:

> *"In the private sector, businesses can mitigate the inefficiencies created by unions. Businesses can substitute capital for labor to compensate for excessive union labor costs, and they can increase the quality of their workforces in response to rising union wages. Unfortunately, public sector managers have fewer incentives and less flexibility to make such changes. Unions have a broader effect on state finances than just pushing to increase employee compensation because they also lobby to increase government spending in general. Public sector unions are some of the most powerful special interest groups in the nation. The advent of public sector collective bargaining in the 1960s and 1970s essentially invited millions of public sector workers to become politically active. Government workers are more likely to vote than other Americans, which magnifies their political power (Bellante, Denholm, and Osorio 2009: 7). States that have mandatory union dues allow unions to build up large war chests to fund their public policy efforts."*

Budget Shortfalls, Employee Compensation, and Collective Bargaining in Local Governments[10]

The authors of this paper conducted an extensive survey of state and local governments to determine and quantify how governments responded to revenue shortfalls in the aftermath of the Recession and how those responses were affected by public union membership and collective bargaining. The authors conclude:

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[10] Reilly, Thom and Reed, Mark B. "Budget Shortfalls, Employee Compensation, and Collective Bargaining in Local Governments (December 2011). State and Local Government Review. Available online at: http://slg.sagepub.com/content/43/3/215

> *"As predicted, both types of government and collective bargaining were associated with budget shortfalls. A significantly lower percentage of counties and those without collective bargaining agreements faced budget shortfalls."*

Beyond the association of collective bargaining with budget shortfalls, however, the authors point to additional factors that affect the future budgets of states and local governments. Ongoing cost of living adjustments and unfunded pensions represent significant threats to the future fiscal well-being of governments. What happens if these payments come due when the economy is in the midst of another recession? Most governments surveyed were far more likely to reduce services than attempt to cut their workforce or successfully negotiate a reduction of pay and benefits with their union workforce. The authors suggest this presents governments with an impasse:

> *"The fiscal stress on local governments is projected to continue for the next several years; and the choices available for cities and counties appear to be limited. The workforces of local governments are becoming increasingly unionized. As a result, wages and benefits have been increasing; even during tough economic times. The inability (or unwillingness) of many jurisdictions to raise taxes and the reluctance of public sector unions to agree to wage and benefit reductions will leave many state and local governments with limited options and make it increasingly difficult to offer the same level of services in their jurisdictions. As more media attention is focused on public sector compensation as well as the high levels of unfunded liabilities for pensions and OPEB [other post-employment benefits] benefits such as retiree health care (and a real or perceived inequity with private sector workers), there is a limit to the reduction in essential services and requests for additional revenue that taxpayers will accept."*

How Government Unions Affect State and Local Finances: An Empirical 50-State Review[11]

This recent Heritage Foundation report takes a nation-wide look at the costs of collective bargaining facing state and local governments, including ranking every state by the "powers of compulsion" government unions hold over the state government. The authors conducted a survey using three statistical methods: synthetic control, regression analysis and Bayesian analysis. All three found that government worker collective bargaining increased government costs, equating to a potential tax burden of anywhere from $2,300 to $3,000 on an average family of four. The paper includes a large amount of data and modeling, and

[11] Lawrence, Geoffrey and Sherk, James and Kevin D. Dayaratna and Belt, Cameron. How Government Unions Affect State and Local Finances: An Empirical 50-State Review (April 11, 2016). Available at: http://report.heritage.org/sr178

explores the effects specific collective bargaining policies have had on individual states, including the added costs to taxpayers:

> *"Nationwide, states' decisions to give government unions collective bargaining powers have inflated spending by state and local governments, and imposed a significant fiscal burden on taxpayers. Our results indicate that somewhere between $127 billion and $164 billion in 2014 spending by these governments is attributable to public-sector collective bargaining rules—with these additional costs concentrated among the states that award the most aggressive powers to unions."*

The report's state-by-state analysis of policies includes ranking each state on its labor law environment from least to most constrictive, determined by factors like collective bargaining regime, right to work laws and legality of strikes. The **Nevada** (bolding added) analysis includes a brief section on the history of labor law in the state, including the 1965 ban on collective bargaining that was reversed in 1969, and the arbitration powers given to fire, police and teachers unions in the intervening years. Nevada has a labor law environment slightly above the middle of the 50 states in terms of limiting organized labor, though potential changes in policy to make the state more bargaining-friendly may cause it to drop significantly.

> *"Its ranking of 21st on this list is under-girded by the continuing prohibition on collective bargaining for state employees and its status as a right-to-work state. Without these provisions, its […] ranking would fall to 37th."*

It includes this additional cautionary note regarding the current ban on collective bargaining for state employees:

> *"If Nevada had maintained its original prohibition on collective bargaining, state and local government spending would have been $0.9 billion to $1.8 billion lower in 2014. If all unions had gained the same powers as those enjoyed by police, firefighter, and teacher unions, 2014 spending would have been $307 million to $649 million greater."*

E. CONCLUSION

Collective bargaining for public workers is a complex issue, with many variables that make fact-based economic analysis difficult. The Great Recession was not caused by labor unions, for example, but it did lead to vast changes in labor law regardless. Additionally, because of the inherently political nature of labor unions it can be difficult to separate the economic effects of restricting or strengthening unions from the political ones. When making changes to collective bargaining laws for public workes, it is vital to be clearheaded and data-driven, and avoid partisan biases to the greatest extent possible. Like other public policy decisions that have large fiscal ramifications, mandatory collective bargaining has a variety of positive and negative aspects. It can provide higher wages and benefits to public employees and can influence the wages and benefits of private sector employees. It can also balloon a state's budget and create pressure to raise tax and/or cut spending in other government activities. Each state's economic and fiscal circumstances are different, and there is no "one size fits all" panacea.

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III. POTENTIAL FISCAL IMPACTS

A. SUMMARY

The current Nevada legislature will likely debate whether to grant state workers the right to mandatory collective bargaining with binding third-party arbitration in order to settle disagreements that arise in the course of bargaining as found in Senate Bill ("S.B.") 135. In this section, we discuss the potential fiscal impacts of such legislation on State of Nevada expenditures. We do not explore other potential effects of collective bargaining, such as changes in public employee wages, political influence for unions, political activity of union members, human resources processes and requirements, quality of services provided by public sector employees, economic impacts on the private sector or impacts to the labor market overall.

Previous research has shown that collective bargaining has both positive and negative effects. As discussed above, some of the benefits may include higher incomes across all jobs—public and private—and, despite its costs, lower state fiscal deficits. However, the main purpose of this section is to examine the hypothetical additional cost to the State of Nevada associated with collective bargaining for state employees.

Research discussed above has suggested that collective bargaining powers for each employee class tend to increase total government expenditures. However, of these studies, research has shown that the largest increase comes from collective bargaining rights for state workers. Recent research has also found that states saw 2.2 – 2.8 times greater increases in total statewide spending when state workers were granted mandatory collective bargaining rights compared to the four other government employee classes (police, firefighter, teachers and other municipal workers).

While it is extremely difficult to pinpoint an exact amount that expenditures will go up, existing literature and our analysis herein clearly show that Nevada will see an economically significant increase in government expenditures over time as a result of extending compulsory collective bargaining rights to state workers.

According to our estimates, if Nevada were to extend compulsory collective bargaining rights to state workers, it is expected that annual state government expenditures would rise by approximately $579 – $596 per capita in 2012 dollars. However, according to our estimates, this change would not occur overnight. Annual state expenditures would potentially and steadily increase year-over-year at an average rate of about $20 – $29 per capita, with the peak of $579 – $596 being reached by 2036. This change represents approximately $1.7 billion to $1.75 billion of additional state spending each year starting in

2036. This would equate to an additional 6.9 – 7.1 percent of spending above 2016 levels, and the current policy of no mandatory collective bargaining for state employees.

B. DATA & METHODOLOGY

Lawrence, Sherk, Dayaratna and Belt were the first to examine multiple decades' worth of expenditure, payroll and employment data across all functional public employee classifications.[1] By investigating a longer timeframe, the authors obtained a further understanding of the effects of policy changes both within and across states. Their analysis was also the first to explicitly look at the effect of compulsory vs. non-compulsory collective bargaining, as well as the effect of having all five possible functional public sector job categories (state, firefighter, police, teacher and other municipal) be compulsory simultaneously.

Lawrence et al. used an updated National Bureau of Economic Research ("NBER") dataset on collective bargaining laws and government expenditures at the state level, both by function area and in the aggregate. They examined annual state and local government spending from 1957 to 2011 and found compelling evidence that extending mandatory collective bargaining rights to public sector employee unions raises government expenditures at the state level. They "unambiguously [found] that government collective bargaining laws are a primary factor in determining government spending levels"[2] and estimated an increase of per capita, per year government spending of up to $1,000 (2009 inflation-adjusted dollars) in states that mandate collective bargaining in all functional classes of a state governments' workforce. They provided multiple statistically significant estimates and verified their findings through a number of tests using three different statistical and econometric methods.

To estimate the state government cost/expenditure effects of having collective bargaining for Nevada public employees, we utilized a similar methodology as Lawrence et al. did (described below), as well as using their base-dataset to perform the analysis herein. We produced three models that we discuss below. These models are:

1. NBER Scale Model
2. Mandatory Bargaining Model
3. All Compulsory Laws Model

[1] Lawrence, Geoffrey, James Sherk, Kevin D. Dayaratna and Cameron Belt. "How Government Unions Affect State and Local Finances: An Empirical 50-State Review." (2016) SR-178. Washington, DC: Heritage Foundation.
[2] Ibid pg. 7.

The initial results presented by Lawrence et al. looked at the average effect of the policy changes for all years after the policy was enacted. While the average effect is important, in reality, the increase in state expenditures tend to accelerate over time, as suggested by the analyses below. Therefore, we also calculated the average annual change in state expenditures to estimate a time period over which the government spending increases.

The main independent variable of interest in the NBER Scale Model is the *Collective Bargaining Scale* value for state workers developed by NBER. This scale provides a quantitative ranking system that attempts to describe the favorableness of a state's policy environment towards public employee unions. The variable is ranked 1 – 8 in increasing favorableness to unions and is defined as:

1. Collective bargaining prohibited
2. No provision
3. Collective bargaining permitted, but not required
4. Public employers are required to "meet and confer" with union leaders
5. Public employers have a compulsory duty to bargain collectively, express or implied
6. Collective bargaining is compulsory and third party mediation or fact finding is required
7. Collective bargaining is compulsory and strikes are protected
8. Collective bargaining is compulsory and arbitration is required

This scale can be broken down into a binary measure - compulsory and not compulsory - to assess if the option to make these laws compulsory has a greater effect. Compulsory takes on a value of "1" (Level 5 and above on the NBER scale) and is "0" if not compulsory (Level 4 and below). This change also helps address potential criticism that the model may assume the effect of each policy choice is equivalent to another.

A collective bargaining bill currently put forth the Nevada legislature, S.B. 135, would be classified as Level 8. As stated in Section 26 of the bill:

> *"1. It is a prohibited practice for the Executive Department or its designated representative willfully to: (a) Refuse to engage in collective bargaining or otherwise fail to bargain in good faith with an exclusive representative, including, without limitation, refusing to engage in mediation or arbitration."*[3]

[3] http://search.leg.state.nv.us/isysquery/35aa0704-74b2-49ae-a27c-9bbd21720e05/1/doc/SB135.PDF#xml=http://WebApp/isysquery/35aa0704-74b2-49ae-a27c-9bbd21720e05/1/hilite/.

Independent and Control Variables

To determine the effect of collective bargaining laws for state workers on state government spending, we used a state-level panel (i.e., multi-dimensional set of data analyzed over several periods) dataset covering the period of 1957 through 2011 in each of the three models mentioned above. The dataset included state-specific total government and state government expenditures. These data were obtained from the U.S. Census Bureau's *Annual Survey of State and Local Government Finance*.[4] We would like to note that updated data from this federal survey has been delayed. It is unclear why.

Our analysis herein is using the most up-to-date available data from the *Annual Survey of State and Local Government Finance*. This dataset also provides a time-series that covers the before and after periods of all state-level collective bargaining laws.

In order to evaluate the impact of the legal environment of collective bargaining on government activities, the model must account for changes within the level of expenditures due to other outside factors. Table III-1 provides a description of the control data used and their sources.

Following Lawrence et al., the control variables that are included within the regression estimates are:

- A two-period lag of the natural logarithm ("log")—a mathematical function—of state population
- The log of personal disposable income
- Whether the state has right-to-work laws
- The political party in power in the governor's office
- The number of welfare FTE workers throughout the state
- A time trend of order two (Time squared and Time).

We tested the robustness of including these variables, as well as excluding them, and the models continued to show statistical significance with varying control variable selections.

The control variables included in the three models are intended to help properly account for differences between (Model variables in parentheses):

- States' political tendencies (right to work and political party in office),
- State-specific recessionary periods (log of per-capita personal income),

[4] Updated data on state-level government expenditures is released by the US Census Bureau every five years: however, due to unknown reasons, comprehensive updated 2017 data is not expected to be released until late 2019. U.S. Department of Commerce, U.S. Census Bureau, "Annual Survey of State & Local Government Finance," https://www.census.gov/programs-surveys/gov-finances.html

- Demand for government services (log of per-capita personal income and welfare FTE employees),
- Demand for state infrastructure (two-year lagged log of state population) and
- Unobserved regional differences, a.k.a. "Fixed Effects."

Fixed Effects are a way for the models to account for differences in states due to other variables that might not be so easily factored in, and that do not really change over time. States differ from one another in ways that do not change over time. Some examples of this are regional cultural differences, economic diversity, cost of living conditions, racial and gender demographics and ideological viewpoints.

Methodology

For this study, we performed a series of panel data regressions, one with Fixed Effects and one without Fixed Effects, both using Driscoll-Kraay robust standard errors.[5] We chose to present these various regressions to validate our results to the greatest extent possible. Each set of results is both a validation and a refinement of the previous result/calculation.

For example, the panel data regressions herein considered all 50 states' various attributes and policies over a specific time period, 55 years in this case. They try to determine the average effect of many factors on the variable of interest, government expenditures in this case. Regressions allow for analysis of large datasets, and to account for various factors that may affect state government expenditures. The goal of regressions is to be able to say with reasonable confidence that, not only do changes in one variable *cause* a change in another variable, but also to estimate by how much they change that variable on average.

We chose to recreate the regression estimations from Lawrence et al., updated the spending figures to 2012 dollars and subjected the regression models to additional "robustness" (or validity) checks. This was done to verify the models' strength and accuracy by including and excluding additional variables. Each validity check provided statistically significant results and verified the previous estimates.

Of the various robustness tests that we performed, we also evaluated the NBER scale in a different manner compared to the standard 1 – 8 scale. While other studies have found it particularly useful, Lawrence et al. note that "government spending may not change linearly as states move up the NBER scale…certain key points along the scale [likely] have a larger fiscal impact than others."[6] Because of this complicating factor,

[5] Driscoll and Kraay standard errors are intended to be used with panel data that has both a large number of panels, as well as a long time series, which exhibits cross-sectional dependence where the error terms are correlated. This is done to correctly estimate whether variables in the analysis are statistically significant. See: Chudik, Alexander, and M. Pesaran. "Large panel data models with cross-sectional dependence: a survey." CAFE Research Paper 13.15 (2013).
[6] Lawrence et al. op. cit., pg. 12.

we also analyzed the differences between states with mandatory collective bargaining and states without mandatory bargaining. Additionally, we looked at the effect of having all five functional classes (state, firefighter, police, teacher and other municipal workers) being given mandatory collective bargaining rights. Additionally, we built upon the Lawrence et al. results and estimated how much expenditures change on average per year.

C. RESULTS

As previously stated, the discussion above suggests that if Nevada passes S.B. 135 and provides state workers with mandatory collective bargaining rights, it should expect to see higher government expenditures. We performed a series of regression analyses to verify this contention. As part of these regressions, we employed Driscoll-Kraay standard errors, both with and without Fixed Effects—the intangibles.

Below we present the selected results of our regression analyses on all 50 states between 1957 and 2011. As stated before, the regression results were inflation-adjusted to 2012 dollars, using the GDP deflator, and validity checks verified the strength of the results.[7] As part of each analysis, we estimated the direct cost to the State of Nevada, as well as total costs (state and local), since collective bargaining for state employees affects local expenditures. However, we focus only on additional expenditures on the State of Nevada in this section since they are more pertinent to our scope of work. This said, we do include the results for the combined state and local government expenditures are also included in the tables at the end of this section.

As discussed above, for each analysis we produced our results using a Fixed Effects model and a non-Fixed Effects model. We used these estimates to generate a range of additional costs/expenditures the State of Nevada associated with having a compulsory collective bargaining policy for state employees under a set of modeling options. Therefore, for each given range, one result was produced by the Fixed Effects model and the other by the non-Fixed Effects model. The end-result of each analysis model is shown in Table III-2.

NBER Scale Model

As part of our findings, we discovered that increased legal rights for state employee unions are likely to lead to higher overall state spending. For example, the result of our first regression analysis estimated that annual per capita state spending rises, on average, by $94 to $113 for every each increment movement up

[7] These results are not presented here. However, the models exhibited similar goodness of fit, statistical significance and relatively equal coefficients throughout the different model specifications, providing support that the estimates presented are robust.

the NBER scale. This means that, on average, a state that moves from prohibiting collective bargaining for state employees (Level 1) to requiring it with arbitration (Level 8)—as proposed in S.B. 135—could eventually see per capita expenditures increase to between $658 and $791 per year, thereafter[8]. As mentioned above, using NBER's 1 – 8 scale has certain limitations, since each policy option may not have an equal effect. However, since Nevada would be moving up the entire scale from 1 to 8, this limitation should not have an effect on the Nevada estimate.

Mandatory Bargaining Model

We decided to refine the NBER Scale Model. Accordingly, we also estimated the potential additional expenditures associated with mandating state employee collective bargaining rights as a binary choice - yes or no. This implicitly assumes that granting the mutual duty to bargain affords the greatest legal power to unions. Under this option, Levels 5 through 8 on the NBER scale were assigned a value of 1 and Levels 1 through 4 were assigned a value of 0. We found that states that passed mandatory collective bargaining laws for state employees could experience long-run additional state government spending of $445 to $549 per capita, per year, from then on. This result is similar to the NBER-driven estimate discussed above.

All Compulsory Laws Model

To further compare and refine our estimates, we analyzed a third set of regressions. Specifically, we created an "All Compulsory" variable that equaled "1" for when a state has mandatory collective bargaining laws for all five possible functional public sector job categories concurrently (state, firefighter, police, teacher and other municipal), which would be the case for Nevada if S.B. 135. Conversely, "All Compulsory" would be 0 if a state does not have mandatory collective bargaining laws for all five job categories concurrently. Under the All Compulsory Laws Model, annual state government expenditures could eventually rise to an inflation-adjusted hypothetical limit of $579 to $596 per capita, per year. This cost effect would continue thereafter. The "All Compulsory" method likely provides the best, most accurate measurement of what states have experienced on average between 1957 through 2011. This method allowed us to focus on states with the most similar legal environments, therefore, refining the comparability of our analysis. As discussed above, our previous findings had some limitations because they did not account for all possible collective bargaining legal factors concurrently. Using the All Compulsory Laws Model allowed us to more accurately measure what Nevada would potentially experience under S.B. 135.

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[8] Moving up from Level 1 to Level 8 represents an increase of seven increments. Therefore, $94 times 7 and $113 times 7 equal $658 and $791, respectively.

Furthermore, of the two models within the "All Compulsory" option, the Fixed Effects alternative and the non-Fixed Effects alternative, the Fixed Effects option constituted our "best estimate." This is because the Fixed Effects model considered state-specific differences (regional, cultural, etc.) that may not change over time or may be difficult to quantify on their own. The Fixed Effects option allowed us to focus on the impacts of the collective bargaining policies without allowing these other effects to influence the collective bargaining cost estimates.

As indicated above, the full effect of the "All Compulsory" policy change would take some time for the $579 – $595 (in 2012 dollars) in annual per capita state expenditures to be reached. To estimate how long it would take to reach this level, we also developed an "All Compulsory Growth" variable.[9] This variable allowed us to measure how much these expenditures would potentially rise *each year* if Nevada opted to extend compulsory collective bargaining to state employees. Based on our modeling, the average annual increase in per capita expenditures would be $20.16 – $29.27 (see Figure III-1). This means that we would expect to see the $579 – $595 annual increase in collective bargaining expenditures for state employees to be reached in as soon as 20 years.[10]

Full State Costs

Each model we obtained was significant to the one percent level, meaning that there was a 99 percent probability that expenditures would increase. This essentially suggests that the three models all statistically reinforce the same major takeaway: mandatory collective bargaining for state workers would add to state government expenditures.

Based on the "best estimate" above, we calculated the hypothetical additional expenditures of having mandatory collective bargaining rights for state workers if such a policy had gone into effect in 2016. According to the U.S. Census Bureau, Nevada's population in 2016 was approximately 2.94 million. If S.B. 135 had been passed then, we project that the state would have experienced an increase in annual state government expenditures of approximately $1.70 billion to $1.75 billion per year by 2036 or sooner, depending on the rate of population growth[11] ($579 * 2.94 million = $1.70 billion and $596 * 2.94 million = $1.75 billion). According to a preliminary estimate of Nevada expenditure data from 2016, this would

[9] This growth variable represents an interaction variable that describes a joint relationship between the time and "All Compulsory" policy variables. It is a technical term and in this case simply refers to the change of the "All Compulsory" variable's costs over time.

[10] This was found by using the Fixed Effect All Compulsory State Spending Estimate ($579 per capita, per year) divided by the All Compulsory Growth estimate ($29.3 per capita, per year, per year) equals 19.8 years.

[11] This was calculated based on the state spending estimates. Low end: $579 per capita, per year * 2.94 million persons = $1.70 billion per year. High end: $596 per capita, per year * 2.94 million persons = $1.75 billion per year.

constitute an increase of roughly 6.9 – 7.1 percent by 2036.[12] The results of each analysis discussed in this section, applied to Nevada's expenditures, is shown in Table III-3.

D. CONCLUSION & POLICY IMPLICATIONS

The results of the various analyses presented above build on the same theme: that collective bargaining rights for state employees likely lead to increases state, as well as local, government spending. Several analyses all point to that assertion to varying degree.

In general, this increase in Nevada state expenditures would likely be attributed to workers' benefits in the form of immediate benefits (e.g. insurance, PTO, etc.) or possibly deferred benefits (e.g. pensions) rather than going toward higher wages or employing additional public sector employees to satisfy growing demands by taxpayers. Evidence of this can be seen in multiple studies cited in the *Literature Review* section herein.

Additional research shows that from 1992 to 2010, municipal fire departments with collective bargaining nationally have wages that are about nine percent higher than those without collective bargaining, while also paying 25 percent more per employee for health, dental, disability and life insurance benefits. The findings were similar for police—municipal departments with collective bargaining paid 10 percent more in wages and 21 percent more in benefits than the typical municipality without collective bargaining.[13] These results were also comparable to earlier study findings by Feuille, Hendricks and Delaney, which found that unionized police departments paid five to 11 percent more in wages and 20 to 30 percent more in benefits.[14]

Ultimately, the question elected officials must ask themselves is whether the benefits associated with collective bargaining outweigh the increased expenditures. This is a philosophical decision.

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[12] Current estimates of Total Nevada government expenditures in 2016 = $24,541,020,000 https://www.census.gov/data/datasets/2016/econ/local/public-use-datasets.html. Based on the calculation above, low end: $1.70 billion in additional state expenditures per year / $24.5 billion in base spending per year = 6.9 percent; high end: $1.75 billion in additional spending per year / $24.5 billion in base spending per year = 7.1 percent.

[13] Sarah Anzia and Terry Moe, "Public Sector Unions and the Costs of Government," American Political Science Association 2012 Annual Meeting Paper, August 2012, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2107862##.

[14] Peter Feuille, Wallace Hendricks and John Thomas Delaney, "The Impact of Interest Arbitration on Police Contracts," *Industrial Relations*, Vol. 24, No. 2 (March 1985), pp. 161-181.

TABLES & FIGURES

Table III-1: Control Variables and Sources

Variable	Source
Collective Bargaining Law	NBER updated to 2011
Right to Work* ("RTW")	Lawrence et al.
Political Party in Governor's Office†	Lawrence et al.
Per Capita Personal Income (2012 $)	BEA^
State Population	US Census Bureau
Welfare FTE Employees	US Census Bureau
*=1 if RTW, =0 if otherwise	
†=1 if Governor Democrat, =0 if otherwise	
^Bureau of Economic Analysis	

Source: RCG Economics

Table III-2: Final Model Results: Increased Government Spending from State Worker Collective Bargaining

Modeling Options (Per capita, per year)	State Employees only	Total (state & local) Employees
NBER One-Increment Change	$94 – $113	$120 – $133
NBER Full-Scale Change	$658 – $791	$840 – $931
Mandatory Bargaining Change	$445 – $459	$615 – $667
All Compulsory Laws Change	$579 – $596	$624 – $764
All Compulsory Laws Growth Change	$20.16 – $29.27	$25.29 – $34.55

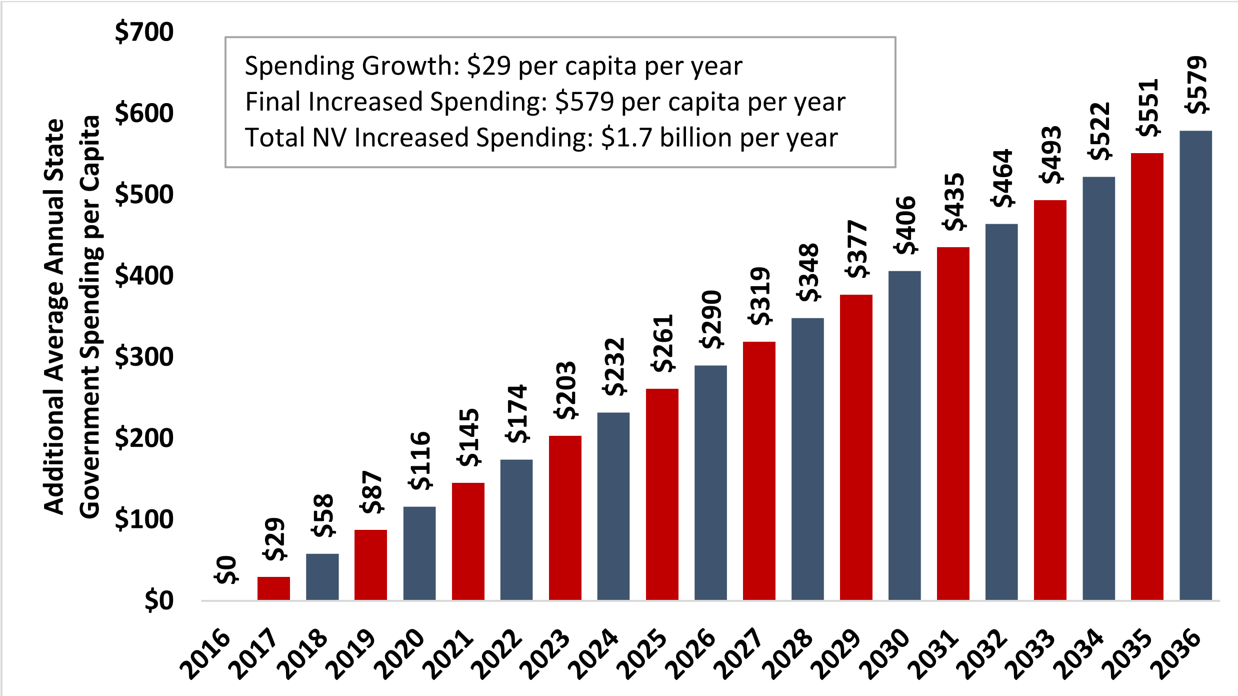
Source: RCG Economics

Table III-3: Nevada-Specific Results: Increased Government Spending from State Worker Collective Bargaining

Modeling Options (Per capita, per year)	State Employees only	Total (state & local) Employees
NBER Scale Model	$658 – $791	$840 – $931
Mandatory Bargaining Model	$445 – $459	$615 – $667
All Compulsory Laws Model	$579 – $596	$624 – $764
All Compulsory (Per Year)	**$1.70 B – $1.75 B**	**$1.83 B – $2.25 B**

Source: RCG Economics

Figure III-1: Fixed Effects Collective Bargaining Model ("Best Estimate")
Annual State Government Expenditures per Capita: CY2016* – 2036



**Note: Red color denotes calendar years ("CY") when Nevada Legislature is in session.*
Source: RCG Economics