LEGISLATIVE PLANNING FOR NEVADA'S FUTURE ECONOMIC DOWNTURN:

Fiscal Implications and Suggested Budget Rule

March 2017

UNLV

UNIVERSITY OF NEVADA LAS VEGAS

Prepared by:

Dr. Alan Schlottmann, UNLV

RCG Economics LLC

Strategies 360

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. Introduction

There will be another recession in Nevada. This is a certainty, as the last recession clearly indicates that our state is not immune to national business cycles. The only question is when, given significant forecasting uncertainty as to the date of "next time." Bank of America[1] warns one could start as soon as this year. The State of Colorado's most recent revenue report includes a section entitled "Predicting the Next Recession[2]." Arizona's legislative economists are worried about one coming in the next two years[3]. Despite these concerns, no state has fully built the potential of the next recession or economic downturn into their budget forecast.

The University of Nevada, Las Vegas asked the Team of Dr. Alan Schlottmann, RCG Economics and Strategies 360 to identify and assess the difficulties in budgeting for a recession and to suggest a method for overcoming those difficulties. First, this report will present some basics on Nevada's budgeting process and will then point out some strengths in Nevada's budget. We will then discuss the state's budgeting response to the Great Recession and present weaknesses in Nevada's ability to deal with the next recession. Finally, we will propose a solution that will make it easier to maintain a balanced state budget and help Nevada prepare for its next recession.

We have identified another option that may be considered, although it too would be subject to the pressures of the political budgeting process. On a national basis, forecasting recessions in state budgets has simply not been particularly successful and downturns in the business cycle have caused reductions in state services at times such services are often needed the most. There are no heroes or villains in this economic drama, which occurs due to a complex economic problem that seems to have escaped a viable solution.

Specifically, our suggestion involves implementing a budget rule based on a simple three-year trailing[4] average that would limit state government expenditures during economic peaks and help conserve revenues over the length of a business cycle. This budget rule provides annual increases in state expenditures during good economic times, provides a cushion for state budgets during the onset of recessionary times and actually promotes countercyclical fiscal policy of increasing expenditures and limited cuts as the economy slows. These three criteria seem contradictory but the proposed budget rule (or

[1] https://www.bloomberg.com/news/articles/2016-10-05/bofa-markets-are-complacent-about-the-risk-of-a-recession-next-year
[2] https://www.colorado.gov/pacific/sites/default/files/Sept2016Forecast.pdf
[3] http://www.azleg.gov/jlbc/100516revenueandbudgetupdate.pdf
[4] The "trailing" average refers to a type of rolling, or moving, average. Whereas a three-year rolling average refers to the most recent three-year average for the most recent data point, the three-year trailing average lags behind one year. For example, for Fiscal Year ("FY") 2016, the rolling average would equal the average of FYs-2014, 2015 and 2016. However, the trailing average would equal to the average of FYs-2013, 2014 and 2015.

a variant of it) provides a feasible starting point for discussion. Furthermore, this budget rule would protect state tax revenues over the business cycle by setting a hard cap on funds when revenues are high in good economic times. It is interesting to note that during the last (and recent) recession, state expenditures would have actually initially increased even with the drop in state revenues.

II. Fiscal Flexibility: Positive Observations on Nevada

A. Budget Basics

It is important to first present some basic information about Nevada's budget. What is a budget? The government, through its elected officials, decides what services it ought to perform and then implements and collects taxes to fund those services. The budget, then, is an accounting of the expenditures necessary to perform the functions of government subject to the constraints of revenues that the government accrues through taxes as well as other sources, such as fees, fines, etc.

In relation to the federal budget, a state budget differs in a few ways. However, the major difference is that the federal budget can run a deficit, meaning that the expenditures can exceed the revenues. Forty-nine of the nation's 50 states require a balanced budget, including Nevada.

The state budget has two parts: the operating budget and the capital budget. The capital budget is used to fund infrastructure and most of its funding comes from sources earmarked for specific projects. This means that the capital budget is not typically included in discussions on funding difficulties. Therefore, this report will refer to the operating budget when discussing the "budget."

Nevada's budget is based on a fiscal year that begins July 1 and ends June 30 the following year. Thus, fiscal year ("FY") 2018 begins July 1, 2017 and ends June 30, 2018. The state budget operates on a biennial basis—that is, a two-year budgeting process. For example, in the current 2017 session of the state legislature, funding for two fiscal years, 2018-19, will be appropriated. This is a result that arises from having a state legislature that meets only once every two years.

However, the budgeting process in Nevada is ongoing and largely performed between legislative sessions by the Governor's office (state's executive branch), which sends the Legislature a proposed recommended budget. The proposed budget is based on desired spending and forecasted revenue estimates. For spending, agencies make their monetary requests to the Governor's office, which uses these requests to prepare its recommendation. The revenue forecasts are performed by the state's "Economic Forum." With this information on spending and revenue, the Governor's office proposes a budget to the Legislature. The budget is reviewed by the Legislature, which then recommends various changes. The two branches consider the differences and agree on a final budget, which becomes law and is used to fund the state government's functions and programs over the following two fiscal years.

As stated above, in Nevada, the budget must be balanced, meaning that the expenditures may not exceed revenues. This requirement prevents the state from borrowing too heavily and producing too large a debt load. It promotes fiscal responsibility and decreases the probability that the state could become insolvent. However, even with this requirement, a state can run into fiscal problems. For example, if revenues fall short of expectations due to unforeseen circumstances, revisions may need to be made to appropriations. The budget rule put forth in this report aims to alleviate those issues.

Nevada's budget is made up of various parts with monies from various sources, including the federal government. It is a complex process with funds moving between municipal governments and their county government, county governments and the state government, as well as the state government and the federal government. Most revenues, regardless of source, are earmarked for specific functions. For this reason, we will focus herein on the discretionary portion of the state budget—the General Fund ("GF"). The GF is that portion of the state budget that is mainly funded with state tax revenues that are not earmarked for particular uses. It is that part of the budget that people normally refer to when discussing "the budget." That is why the GF is the primary focus of this report.

The GF actually makes up a relatively small portion of the state's overall budget—about 28 percent of total[5] in FY-2015 (see Figure II-1). However, this is not unexpected. After all, according to the Brookings Institution, the discretionary portion of the federal budget in 2015, likewise, only made up 32 percent of the total federal budget[6]. Most of the federal budget is concerned with mandatory spending on programs like Social Security and Medicare. Like the federal budget, discretionary spending in Nevada does not represent the lion's share of the state spending, but it is an important component. The GF is also susceptible to volatile revenues and shortfalls.

B. Budget Attributes

Before moving on to the particulars of the Nevada budget and, specifically, the GF, it would be useful to compare Nevada's spending with other states' spending. Nevada has several strengths concerning its budget compared to other states.

One positive attribute of the Nevada budget is that it relies much less than other states on federal funding for its Medicaid spending. According to the Pew Charitable Trusts ("Pew")[7], in 2014, state Medicaid

---

[5] These exclude balance forward, reversions and inter-agency transfers.
[6] https://www.brookings.edu/blog/up-front/2016/06/01/the-hutchins-center-explains-federal-budget-basics/
[7] The Pew Charitable Trust is a major national resource for important comparative state budget data and we urge legislative staff and other interested parties to utilize this resource. http://www.pewtrusts.org/en/multimedia/data-visualizations/2014/fiscal-50#ind0

spending as a share of own-source revenues was only 8.8 percent in Nevada compared to 16.8 nationwide. This suggests that Nevada is less dependent upon its own-source revenues with respect to Medicaid expenses than other states. This, of course, is a bit of a double-edged sword, because Nevada is also more reliant on the federal government for Medicaid funding than many other states.

Nevada is also doing relatively well in terms of controlling its unfunded retirement costs. These obligations, as a share of state personal income, stand at 14.6 percent in Nevada. This is slightly better than for the nation's 50 states, where these unfunded obligations make up 14.8 percent of state personal income, according to Pew.

Inflation-adjusted, or real, state personal income in Nevada is growing faster than the U.S. average, according to Pew. This comes after being one of the states hit the hardest by the Great Recession. For Nevada, personal income grew 4.3 percent in 2015, compared to 3.4 percent for all 50 states. Of course, this growth is a bit overdue.

Nevada is also outperforming the national average concerning tax revenue growth. On a year-over-year basis in Q2, 2016, Nevada tax revenue grew 6.2 percent, compared to -1.6 percent for the nation as a whole, according to the United States Census Bureau.

An important contributor to the performance of Nevada's budget is employment growth, which is now relatively strong compared to the rest of the U.S. According to the Bureau of Labor Statistics ("BLS"), employment in Nevada grew by three percent at the end of 2016 on a seasonally-adjusted basis. Average employment growth in the U.S. was only 1.5 percent.

These facts suggest that Nevada, during good economic times, has some flexibility in planning for future rocky roads in the state economy.

III. Nevada's Fiscal Response in Recession

While Nevada does have its budgetary strengths, as discussed above, it also has some weaknesses. For example, Nevada's credit rating is below the national average. According to Pew[8], the state had an AA credit rating in 2014. The median credit rating in the 50 states was AA+. Only five states had credit ratings below AA, while 28 had better.

This is likely due to Nevada's relatively high debt load and volatile revenue sources. According to Pew, Nevada has a revenue volatility score of 5.7, which is higher than the national average of 5.1. Pew measures volatility by the "standard deviation of the yearly percent change in a state's total tax revenue—not just its major taxes—adjusted for all known tax changes." Nevada's score means that it has a more volatile revenue stream than the average state. The state's total debt per capita was approximately $19,200 in 2012, above the national average of $16,200 in debt per capita[9]. At this level of debt, Nevada came in with the 13th highest debt load in the nation.

A. Historical Response

To examine Nevada's response to the Great Recession, we must consider state revenues and expenditures before and after the downturn. Table III-1 provides actual revenues for Nevada in each FY between 1996 and 2016. Figure III-1 shows these "nominal" revenues along with inflation-adjusted ("real") revenues. The table and figure show that Nevada experienced a significant revenue hit in FY-2009, which was the first full fiscal year after the start (December 2007) of the Great Recession. One may also notice that, in real terms, tax revenues have been relatively flat ever since. This trend is even more striking when looking at state revenues per capita. In fact, on a per capita basis, revenues may have even been declining (see Figure III-2).

Examining GF expenditures (see Table III-2), on the other hand, one notices that they actually spiked in FY-2009, reaching their highest levels on record (see Figure III-3). This was also true on a per capita basis (see Figure III-4). Thus, during the 2006-2016 period, the fiscal year with the lowest GF revenues was also the year with the highest GF expenditures (see Figure III-5). Nevada, like most other states, however, cannot run a deficit. Any difference (see Figure III-6) GF revenues and expenditures would have to be covered by either using funding from some source, such as a "rainy day fund," or from reductions in spending. The difference in the FY-2009 GF was covered largely by the state's rainy day fund (aka the Account to Stabilize

[8] Stateline: The Daily News Service of the Pew Charitable Trusts, "Infographic: S&P State Credit Ratings, 2001-2014," June 9, 2014.
[9] State Budget Solutions, "State Budget Solutions' Fourth Annual State Debt Report," January 8, 2014.

the Operation of State Government, which was approximately $268 million at the end of FY-2008[10]) and federal funds from the American Recovery and Reinvestment Act[11]. Because this difference was not sustainable, with a quickly depleting rainy day fund, for more than a year, expenditures took a big hit in FY-2010.

Breaking down revenues and expenditures sheds light on the state's historical response to the Great Recession. We have only looked at revenues and expenditures before and after the Great Recession (FYs-2006 and 2016) because of the lack of data available for recessions prior to that. Nevada was largely insulated from the effects of the short-lived national recession of 2001 because of the booming regional economy and subsequent high population growth.

First, we analyze the GF's revenue sources. Figures III-7 and 8 show the GF revenue share breakdown, by tax source for two years: FY-2006 and 2016. These two years were chosen because they span the time from just before the start of the Great Recession to the most current and actual revenue year. The charts show how the various tax revenue streams have shifted in importance for the state. Of note, the revenues included in these charts only include those from taxes. They exclude revenues from other sources, such as fees. However, these other sources account for less than seven percent of total GF revenues.

In FY-2006, Sales & Use Taxes and Gaming Taxes accounted for a staggering 65.2 percent of total GF revenue. The overreliance of Nevada's tax structure on just these two revenue sources demonstrated why the state's tax coffers took such a large hit in the wake of the Great Recession. By FY-2016, state revenues were still too dependent on these two sources. However, the situation was somewhat improved, with the share of these two taxes, combined, declining 13.3 points to 51.9 percent. Changes in tax rates and the introduction of a new tax, the Commerce Tax—a business gross receipts tax—have helped temper the overreliance of tax revenues on sales and gaming taxes. But the Commerce Tax remains controversial.

Figures III-9 and 10 show the expenditure breakdowns by function[12] for FY-2006 and FY-2016. These charts show the winners and losers in terms of a function's share of total expenditures before and after the recession. Looking at the two charts, the obvious loser was higher education. The share of the GF that the Nevada System of Higher Education ("NSHE") received fell from 20.2 percent to 14.5 percent. In that same timer period, funding for K-12 education increased in share from 33.6 percent to 38.3 percent. Human

---

[10] Nevada General Fund Appropriations: 2009

[11] https://www.leg.state.nv.us/Division/fiscal/Appropriation%20Reports/2009AppropriationsReports/4ARRA.pdf

[12] Function is a term used by the State of Nevada to refer to a group of related departments. For example, the "Education" function refers primarily to the Department of Education and the Nevada System of Higher Education.

Services, which deals primarily with Medicaid, saw its share rise as well, from 28.1 percent of GF appropriations to 30.1 percent.
We also examined departments with appropriations exceeding $30 million in FY-2015 (see Figure III-11). This chart compares spending for each one of these departments between FY-2008 and FY-2015. These years were chosen due to data availability constraints with this particular series.

Appropriations hit their maximums in FY-2009, as previously mentioned. Therefore, these data still provide a good look at pre- and post-recession spending. Of these eight departments, some came out better than others. The Department of Education (K-12) and the Department of Health & Human Services were the only two departments that saw their total appropriations increase on a nominal, or non-inflation adjusted, basis. The biggest loser was the Department of Conservation & Natural Resources, the agency that oversees state lands and environmental protection. Appropriations fell to 54.7 percent of the FY-2008 level. Two other departments saw their funding cut to under 80 percent of FY-2008 levels: NSHE (78.1 percent) and the Department of Public Safety, which oversees the state's parole system. The remaining three departments experienced reductions to between 80 and 99 percent of FY-2008. These are the Gaming Control Board (83.6 percent), Department of Taxation (85.9 percent) and the Department of Corrections (94.6 percent), responsible for the state prison system.

B. Future Outlook

To help protect government-funded services from revenue declines resulting from the next recession, it is important to prepare and plan ahead. However, as we've noted, the majority of states are highly unprepared for the next downturn[13], including Nevada. The Government Finance Officers Association ("GFOA") recommends[14] that states maintain a rainy day fund balance of approximately 15 percent of their annual revenues, on average. It also recommends that states with more volatile revenue sources maintain a higher level of rainy day fund balance. Nevada falls into that category, as stated above. It should, therefore, keep a fund balance of more than 15 percent, according to the GFOA. However, Nevada's current fund balance is literally 0 percent[15].

RCG Economics and Hightower-Las Vegas[16], recently reported in their monthly Stat Pack publication that Nevada is underprepared for the next recession, according to the Mercatus Center at George Mason

[13] http://www.taxpolicycenter.org/taxvox/next-recession-are-states-ready
[14] http://www.gfoa.org/appropriate-level-unrestricted-fund-balance-general-fund
[15] Pew Charitable Trust, Stateline, January 4, 2017 by Elaine S. Povich, "In Tide of Red Ink, Some States Show Surpluses."
[16] http://thestatpack.com/blogs/thestatpack/nv-among-least-prepared-for-downturn/

University. Specifically, Nevada ranks 43rd in preparedness for an economic downturn according to the Mercatus Center.

Before continuing the discussion on the state's preparedness for the next recession, it would be helpful to first discuss the business cycle. All state economies have business cycles categorized by highs followed by lows. The highs and lows will be followed by subsequent highs and lows. This pattern repeats itself in cycles. Each cycle is referred to as a business or economic cycle.

Budgets change with the business cycle. These changes depend on how the two components of the budget—revenue and expenditure—change. Government revenues typically change along with the business cycle. During the highs, the economy does well and tax revenues tend to increase above their long-term trend levels. In a prelude to the lows in the cycle, the economy contracts and, as it does, tax revenue tends to decline. Thus, during the highs, it would be prudent to save extra revenue and spend it during the lows when revenues fall to make up the difference. However, it has become clear from the history of rainy day funds in most states that this rarely occurs. In general, extra revenues are utilized during the peaks of the business cycles for additional expenditures. These "extra" expenditures are, of course, not able to be maintained during an economic downturn. Under the proposed budget rule, the state would not fall victim to such folly because the budget rule effectively caps expenditures at a level below actual revenues in most years. Any additional revenues would be legally protected from overspending because those revenues would be committed to spending in future fiscal years.

The need for government expenditures, on the other hand, tends to change counter to the business cycle. During economic peaks, state residents are more likely to be doing relatively well financially, whereas in the trough of the cycles residents are more likely to be doing relatively poorly financially. Thus, when things are going well economically-speaking, people require less help from the government, and when things turn economically poor, people will be more likely to require assistance in the form of unemployment insurance payments, welfare services, medical care, among other things. These services require funding at the same time revenues are tending to fall. Accordingly, it is said that the tax revenue responses are "procyclical," as in moving with the business cycle and that the need for expenditure responses are "countercyclical," moving counter to the business cycle. [17] Further, additional state expenditures can help to counter the worst effects of an economic downturn. In general, this simply does not occur because state revenue is falling even though additional expenditures would be useful.

[17] Countercyclical simply means in the other direction than the change in the economy. In this case, allowing Nevada's expenditures to remain constant or even increase at the beginning of a recession to offset some of the worst effects of the downturn.

It would be prudent for the budgeting process to be able to produce countercyclical fiscal results. Nevada's revenue cycle resulted in large cuts to important programs during and after the Great Recession, and wiped out the state's rainy day fund. Continuing such a budget policy will again leave the state vulnerable to significant cuts to important services in the future. Nevada is now particularly exposed to hardship because there are no longer any rainy day funds left to call upon.

It would behoove the state to find a way to avoid such a situation. Other states are in a similar situation and there has been significant research done on ways to make states "recession-resistant" by promoting countercyclical policies. One promising method is to employ what is known as a "business cycle balanced budget." Such budgets do exist, but not in the United States, though the concept[18] has been broached in the United States Congress[19]. Both Sweden[20] and Chile[21] have implemented versions of this type of budget and both versions have seen success. Nevada is in a position to heed the lessons learned elsewhere and lead the way nationally in terms of a budgetary policy that increases public services during good times that can be substantially maintained during poor times in the economy.

Nevada could implement such a policy in various ways. However, in this paper, we focus on a simplified version of one specific method. As mentioned above, this method employs a trailing three-year moving average in GF revenues to support GF expenditures. This method of balancing the budget would implement a countercyclical budget, promote countercyclical economic policy and reduce volatility in GF revenues to the state. The next section will discuss this method of budgeting as well as its advantages and disadvantages in greater detail.

[18] http://amash.house.gov/sites/amash.house.gov/files/BCBBA%20-%20Long%20Description%20with%20Graphics_1.pdf
[19] http://www.crfb.org/blogs/different-approach-balanced-budget-amendment
[20] http://www.economonitor.com/dolanecon/2011/07/31/how-smart-fiscal-rules-keep-swedens-budget-in-balance/
[21] http://www.economonitor.com/dolanecon/2011/07/24/how-intelligent-budget-rules-help-chile-prosper-lessons-for-the-us/

IV. Proposed Solution

As noted above, Nevada is similar to other states in that state tax revenues are procyclical to the national economy, rising during economic booms and falling in economic recessions. Two recent studies have shed additional insights on the underlying dynamics facing Nevada policymakers in dealing with the concept of "reserves."

The purpose of this section is not to dwell on so-called rainy day funds but, alternatively, to suggest a flexible budget rule which might reduce the negative impact of future recessionary environments on the provision of state services.

Two recent studies summarized below are fundamental to the underlying dynamics of the Nevada budget:

- In 2015, a nonpartisan UNLV study of the four major revenue sources in Nevada's GF was undertaken by the Consultant Team.[22] The purpose of the study was to focus on contrasting and comparing the growth and volatility of Nevada's GF to changes in the business cycle:

  A review of the GF's major revenue sources suggest that Nevada's tax "portfolio" has consistently suffered from an inadequate response to both the business cycle and long-run economic growth. Given historically strong and rapid economic and population growth, the average growth rates of Nevada taxes imply a more positive view of Nevada's revenues than is warranted and mask serious structural issues. The tax portfolio of Nevada's GF as it exists will/would always be a source of some contention, as the portfolio simply lags long-run growth; the tension over its composition will never just "go away."

- In 2016, the Consultant Team prepared another study for UNLV of a potential sales tax on services in Nevada. That study was undertaken to explore if such a tax would reduce revenue volatility[23] in the overall Nevada revenue portfolio.[24]

---

[22] This UNLV study titled "Nevada's General Fund: Growth and Volatility", Dr. Alan Schlottmann and RCG Economics, 2015 is available at the website of RCG Economics. Link: http://www.rcg1.com/wp-content/uploads/2014/06/2015-3-3-Nevada-GF-Growth_Volatility.pdf.
[23] The study did not suggest an overall tax increase. It considered more stable tax options.
[24] The 2016 UNLV study contains new statistical work regarding the impact of a sales tax on services on revenue volatility across states. The study titled " A General Sales Tax on Services in Nevada; Fiscal Impacts and Stability", Dr. Alan Schlottmann, RCG Economics and Strategies 360, 2016 is also available at the website of RCG Economics. Link: http://www.rcg1.com/wp-content/uploads/2014/06/FINAL-2-20-UNLV-Sale-Tax-on-Services-2.pdf.

> The fundamental research question in the study of a potential sales tax on services was the extent to which the broad taxation of services affects the stability of a state revenue system. It is interesting to note that, in general, the evidence suggests that current sales taxes have become less responsive to economic growth over time. This observation, if true, helps to explain the ongoing concerns by policymakers over taxes and revenues. However, our research also suggests that a sales tax on services does not represent a "magic bullet" to state public finances. There are also broader considerations that are not simply arithmetic in nature but involve policy decisions on the progressivity of state taxes and the existence of other taxes. For example, Nevada has eschewed taxing necessities, such as groceries, pharmaceuticals, rents, etc. given concerns over progressivity and impacts on lower-income households.

As noted previously, with respect to rainy day funds, the GFOA has developed a set of factors and guidelines to assess risk-levels for setting adequate levels of reserve funds.[25] The factors include a set of reasonable items to consider that reflect financial prudence such as revenue source stability, expenditure volatility, vulnerability to extreme events, growth and capital projects, etc. Although these factors are not, in our opinion, controversial, the resulting targets for reserves reflect the difficulty of any state, much less Nevada, attaining such goals.

Since the GFOA recommendations include smaller cities, the more relevant recommendations for states are limited to the two recommendations for minimal-risk and low-to-moderate risk levels (rather than moderate-to-high risk and high-risk levels). In the two lower and relevant cases, the recommended analytical guidelines for rainy day funds, in our opinion, would be 16.6 percent and 17 percent to 25 percent of expenditures, respectively. As pointed out by RCG Economics (2014), it is interesting to note that in Nevada the theoretical (since the funds are not there) legal cap is 20 percent of total of appropriations from the GF.[26]

The current status of states' reserve funds is rather anemic, particularly when primary resource-producing states as Alaska and Wyoming are excluded. Based upon available data for 43 states (see Table IV-1), most states have less than five percent in reserves, with even this low figure exceeding the current zero percent figure for Nevada[27].

---

[25]GFOA. op.cit.

[26] See RCG Economics (2014) "Public Policy Focus: Nevada's Rainy Day Fund Needs Reform", Nevada by the Numbers Blog, Public Policy Issues at the RCG Economics website.

[27] Nevada's history of the rainy day fund (or, more accurately, Account to Stabilize the Operation of State Government) is summarized elsewhere. An excellent one-page summary (on page 52) is contained in "Nevada Legislative Appropriations Report Fiscal Years 2015-16 and 2016-17" Fiscal Analysis Division, Legislative Conference Bureau. Recent data is nicely summarized in a convenient manner (see page 11) in "2015-2017 Executive Budget for the State of

Therefore, the remainder of this section suggests that Nevada policymakers should explore a potential budget rule for the GF that might satisfy a conflicting set of requirements:

1. Allow increases in Nevada's annual expenditures during good economic times,
2. Provide a revenue cushion for state expenditures during the onset of a generally unanticipated economic contraction (downturn); and
3. Act as a countercyclical factor to help offset the worst impacts of an unanticipated recession on the Nevada GF and subsequent negative impacts on state services.[28]

These three criteria seem contradictory but are actually able to be met, not by a traditional rainy day fund, but by a budget rule that assists in smoothing out Nevada expenditures. The proposed budget rule below is not firm and it could be modified if needed but it serves as a potentially feasible starting point.[29]

As discussed previously, the rule relies on using a three-year trailing average of state GF revenues in order to balance the budget. The three-year rule spreads the revenues out over the length of a business cycle. This budget rule is remarkably simple and, as other nations with similar rules have shown[30] [31], effective at limiting major fluctuations in government spending.

This proposal, in particular, is similar to the one proposed in Congress and sponsored by United States Congressman Justin Amash[32]. Spending would be equal to the average of the revenues of the three trailing years. For example, spending in FY-2017 would be equal to the average of revenues in FYs-2014, 2015 and 2016. That proposed amendment to the United States Constitution also controlled for inflation and population growth, but, for the sake of simplicity, those controls are not included in the model used in this report.

Nevada", Office of the Governor. For an analytical discussion, see RCG Economics (2014), op. cit. at the RCG Economics website.

[28] As has been noted above, countercyclical simply means in the other direction than the change in the economy. For example, allowing Nevada's expenditures to remain constant or even slightly increase at the beginning of a recession to offset some of the worst effects of the downturn

[29] For example, if Nevada had a period of particularly high population growth an adjustment by population growth.

[30] "How Smart Fiscal Rules…" Economonitor, op.cit.

[31] "How Intelligent Budget Rules…" Economonitor, op.cit.

[32] Amash.house.gov, op.cit.

Figure IV-1 compares Nevada GF revenues with the three-year trailing average of GF revenues. The major takeaways are:

- During times of economic growth, GF revenues using the three-year trailing average method grow, but lag behind the actual GF revenues; thereby limiting fluctuations in spending due to a short-term trend.
- Available GF revenues can continue to increase into the beginning of an economic downturn.
- Had Nevada been using such a method at the start of the Great Recession, available GF revenues in the first FY of the recession would have actually increased.
- When GF revenues finally decreased in 2010, the decline would have been relatively small.
- State tax revenues would have remained stable and predictable.

Implementing this simple rule would have spared Nevada much hardship in the aftermath of the Great Recession. Table IV-2 shows that in FYs-2008 and 2009, there was a combined drop in revenue of $405 million, including a decline of $315 million in FY-2009 alone. This decline accounted for 11.5 percent of that year's total revenues. A rainy day fund of 10 percent would not have been able to cover even that single year's decline in revenue. Furthermore, since FY-2008, there have been four years with year-over-year declines in revenue.

The year-over-year change in revenues under the three-year trailing average rule would have been far more stable over the course of these years. Aside from the fact that revenues using the three-year trailing average rule would have risen in FY-2009, which, as noted above, was a year with a large increase in expenditures, there would have also been less volatility in revenues using the rule throughout the recession. Under the rule, there would still have been two years of declines in revenues after the start of the Great Recession—FYs-2010 and 2011—but the combined decline over those two years would have been only $152 million versus the $405 million actually experienced. The larger of those declines would have been $106 million in FY-2010. This would have amounted to only 3.6 percent of that FY's total funds under the suggested budget rule. With so much less volatility in available revenues, a 10 percent rainy day fund would have easily handled the declines in revenue seen as a result of the Great Recession.

As the final column of the table shows, the three-year trailing average would potentially create a significantly large surplus of funds each year. Using the 18 years of available data, that would have resulted in a combined surplus of $2 billion. This, of course, would not be politically feasible; nor would it be legal due to the rainy day fund cap. This would-be surplus is a consequence of the mathematics of averages and would be due to constantly increasing revenues—a result of inflation and an economy that grows in the long-run. This issue could be remedied relatively easily by removing the trend from the revenues using statistical techniques. This would operate as a control, as previously mentioned, for inflation and economic growth.

After implementing these controls to correct for this mathematical anomaly, there would still be additional funds left over. Most of the remaining amount not folded back into the budget would exist as a consequence of the rule to fund government during the trough of the business cycle. These revenues could be parked in an investment vehicle until needed. The difference between these savings and a rainy day fund is that under the proposed budget rule, spending is explicitly capped such that saved funds could not be used because they would cause appropriations to exceed the cap. Furthermore, those additional funds would already be committed to appropriations within three years due to the nature of the budget rule. These savings differ from rainy day funds because under current budgeting law, no spending cap exists. Therefore, policymakers are accustomed to include rainy day funds in appropriations calculations. In any case, this issue would need to be studied further.

Additionally, based on how the model controls would be calculated and how interest gained from the savings vehicle would be handled, a possible use for any additional excess funds could be to put them into a rainy day fund. However, whereas GF spending under the rule would be capped by prior fiscal years' revenues, this rainy day account would have to be used in some other way, perhaps through a separate and temporary spending rule or by funneling the monies into the capital budget during lean times. Thus, the proposed rule would not only create a more manageable state budget, regardless of a rainy day fund, it would also remake a rainy day fund into a more effective tool for simulating growth or plugging budget gaps. Again, all these possible uses call for further study as to preserve the intent of the proposed rule and to promote responsible use.

Another potential issue with the simplified model used in this report is that per capita revenues can decrease. However, this is a tax structure issue, not a flaw in the budget rule. As mentioned previously, Nevada's tax structure is constructed such that it has routinely had problems maintaining constant revenues on a per capita basis. The dwindling revenues per capita over time have forced the state to pass large tax increases, like those in 2003[33] and 2015[34]. The additional revenues generated by these tax increases, along with other smaller increases, were included as part of the "revolving" revenues used in our recommended budget rule. The timing of revenue collections with respect to appropriations remains a question under our budget rule and would need to be studied. However, this report assumes that the revenues would be collected as they come in. Therefore, new tax revenues would be phased in to the state budget over three years. Again, these are issues that require further study.

[33] https://lasvegassun.com/news/2003/mar/05/highlights-of-nevada-tax-increase-plan/
[34] http://www.usatoday.com/story/news/2015/06/01/nevada-tax-hike-sandoval-education/28309841/

The solution to balancing the state budget over the long-run proposed herein has several benefits, as shown above. However, there is another benefit that comes from the use of this rule. Its countercyclical nature would have a countercyclical effect on the economy, which would further stabilize revenues over the long-run. This would occur because collecting tax revenues during the growth phase of the business cycle would emphasize long-run planning during good economic times. The retained revenues would serve as a powerful tool under Nevada's direct control to invigorate a flagging economy.

As shown, it is true that the rate of increased growth in state expenditures during the onset of good economic times does take a while to "catch up" to increasing state revenues. This favorable situation under the case of explosive growth could, of course, be accommodated with a variant of the suggested budget rule. However, unless our ability to precisely forecast downturns (recessions) improves, which is not likely, the human pain of future budget cuts is avoided.

V. Conclusions

This report finds that implementation of a three-year trailing average on state revenues (or a variant of it) would provide policymakers with a viable solution to reigning in the state budget's volatility and significantly assist in protecting government functions from underfunding during poor economic conditions. Stabilizing Nevada's state government revenues and expenditures would provide annual budget increases during good economic times and ensure that the government continues to function with minimal budget problems due to revenue shortfalls during economic downturns. Further, additional expenditures available to Nevada during the economic downturn would represent a counteracting (positive) impact on the state economy.

As discussed above, Nevada has some strengths concerning its budget. However, as a general statement, the state's budget is funded largely with taxes on disposable consumption, which makes the state's revenue stream more volatile than the average U.S. state.

As the Great Recession showed, this volatility led to a large drop in available funds after the economy tanked. The shortfalls led to significant cuts to many government functions. As with most states, the concept of a rainy day fund was inadequate to deal with the drop in revenues. As a result, government services, as shown in this report, suffered significant reductions in funding. These reductions could have been mitigated using the budget rule proposed in this report.

We would suggest that the Governor's Office and Nevada Legislature discuss the potential benefits of this type of budget rule and further study the benefits and implementation of such a rule or a variant of it.

A. Tables & Figures

Tables

Table III-1: Nevada Actual GF Revenues: FY-1996 - 2016

FY	Revenues		FY	Revenues
1996	$1,291,286,981		2007	$3,145,042,636
1997	$1,352,588,553		2008	$3,054,267,831
1998	$1,412,378,339		2009	$2,739,340,032
1999	$1,530,956,914		2010	$3,007,019,753
2000	$1,646,823,340		2011	$3,175,426,158
2001	$1,734,116,512		2012	$3,081,768,174
2002	$1,751,957,967		2013	$3,132,601,761
2003	$1,825,352,046		2014	$3,066,946,360
2004	$2,404,005,956		2015	$3,284,482,699
2005	$2,742,665,021		2016	$3,693,842,787
2006	$3,058,803,459			

Sources: Nevada Revenue Reference Manuals (2003-2017)

Table III-2: Nevada Actual GF Expenditures: FY-1999 - 2017

FY	Expenditures		FY	Expenditures
1999	$1,555,358,330		2009	$3,726,608,408
2000	$1,567,370,528		2010	$3,030,613,492
2001	$1,644,527,095		2011	$3,271,957,077
2002	$1,826,553,944		2012	$3,067,419,574
2003	$2,018,623,392		2013	$3,181,723,942
2004	$2,298,612,901		2014	$3,284,438,159
2005	$2,575,341,124		2015	$3,379,198,548
2006	$2,757,547,292		2016*	$3,558,057,616
2007	$3,068,280,393		2017*	$3,738,711,497
2008	$3,354,491,211			

Source: Nevada Legislative Appropriations Report (1999-2015)
**Note: Legislature approved, but not final*

Table IV-1: States' Distribution of Reserve Funds as Percent of FY Expenditures in 43 States: FY-2017

Percentage	Number out of 43 States	Cumulative Percentage
Less than 5 percent	22 States	51%
Less than 10.1 percent	39 States	91%
Less than 15 percent	41 States	95%
Less than 20 percent	43 states	100%
Note: Nevada percentage 0%		

Source: Pew Charitable Trust, Stateline, January 4, 2017 by Elaine S. Povich, "In Tide of Red Ink, Some States Show Surpluses."

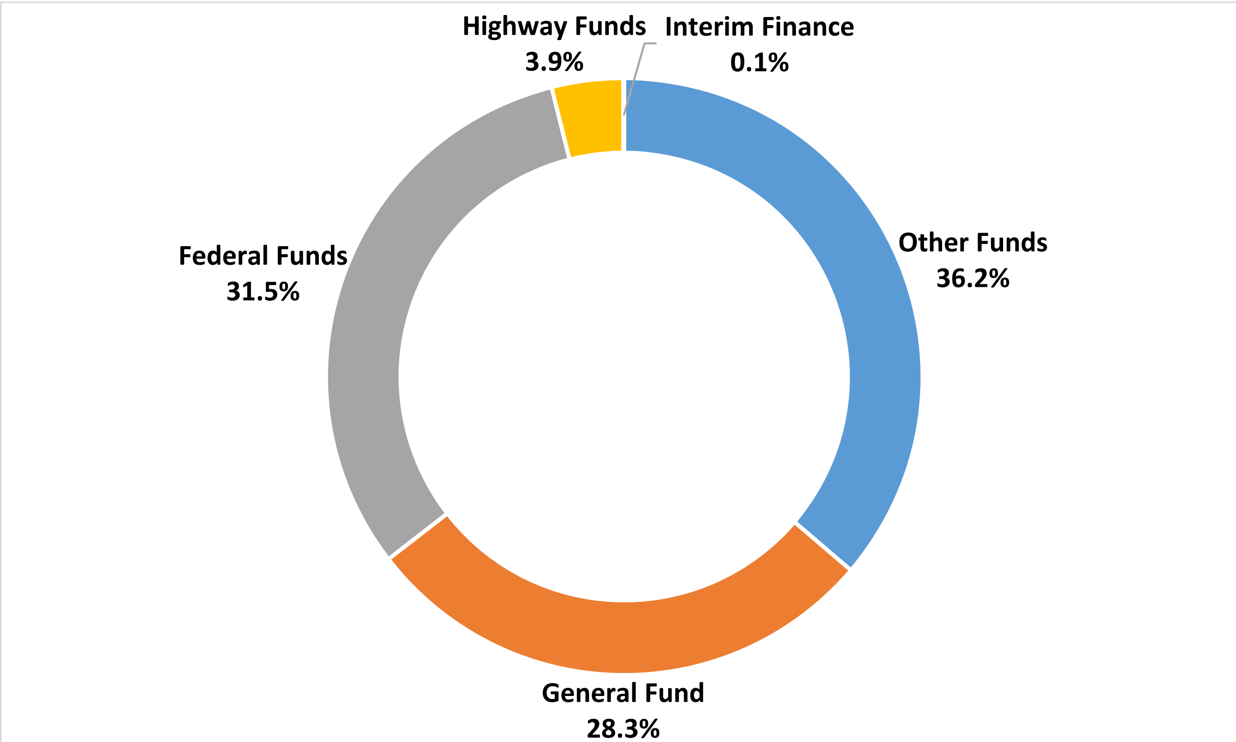
Table IV-2: Nevada Actual GF Revenues vs. Three-Year Trailing Average Rule with Changes in Revenue and Difference in Revenue Methods: FY-1999 - 2016

FY	Revenues	Revenue Chg.	3-Yr Trailing Avg.	3-Yr Trailing Avg. Chg.	Difference (Actual – Trailing)
1996	$1,291,286,981				
1997	$1,352,588,553	$61,301,572			
1998	$1,412,378,339	$59,789,786			
1999	$1,530,956,914	$118,578,575	$1,352,084,624		$178,872,290
2000	$1,646,823,340	$115,866,426	$1,431,974,602	$79,889,978	$214,848,738
2001	$1,734,116,512	$87,293,172	$1,530,052,864	$98,078,262	$204,063,648
2002	$1,751,957,967	$17,841,455	$1,637,298,922	$107,246,058	$114,659,045
2003	$1,825,352,046	$73,394,079	$1,710,965,940	$73,667,018	$114,386,106
2004	$2,404,005,956	$578,653,910	$1,770,475,508	$59,509,569	$633,530,448
2005	$2,742,665,021	$338,659,065	$1,993,771,990	$223,296,481	$748,893,031
2006	$3,058,803,459	$316,138,438	$2,324,007,674	$330,235,685	$734,795,785
2007	$3,145,042,636	$86,239,177	$2,735,158,145	$411,150,471	$409,884,491
2008	$3,054,267,831	-$90,774,805	$2,982,170,372	$247,012,227	$72,097,459
2009	$2,739,340,032	-$314,927,799	$3,086,037,975	$103,867,603	-$346,697,943
2010	$3,007,019,753	$267,679,721	$2,979,550,166	-$106,487,809	$27,469,587
2011	$3,175,426,158	$168,406,405	$2,933,542,539	-$46,007,628	$241,883,619
2012	$3,081,768,174	-$93,657,984	$2,973,928,648	$40,386,109	$107,839,526
2013	$3,132,601,761	$50,833,587	$3,088,071,362	$114,142,714	$44,530,399
2014	$3,066,946,360	-$65,655,401	$3,129,932,031	$41,860,669	-$62,985,671
2015	$3,284,482,699	$217,536,339	$3,093,772,098	-$36,159,933	$190,710,601
2016	$3,693,842,787	$409,360,088	$3,161,343,607	$67,571,508	$532,499,180
				Difference Total	**$1,996,339,324**

Sources: Nevada Revenue Reference Manuals 2003-2017, RCG Economics

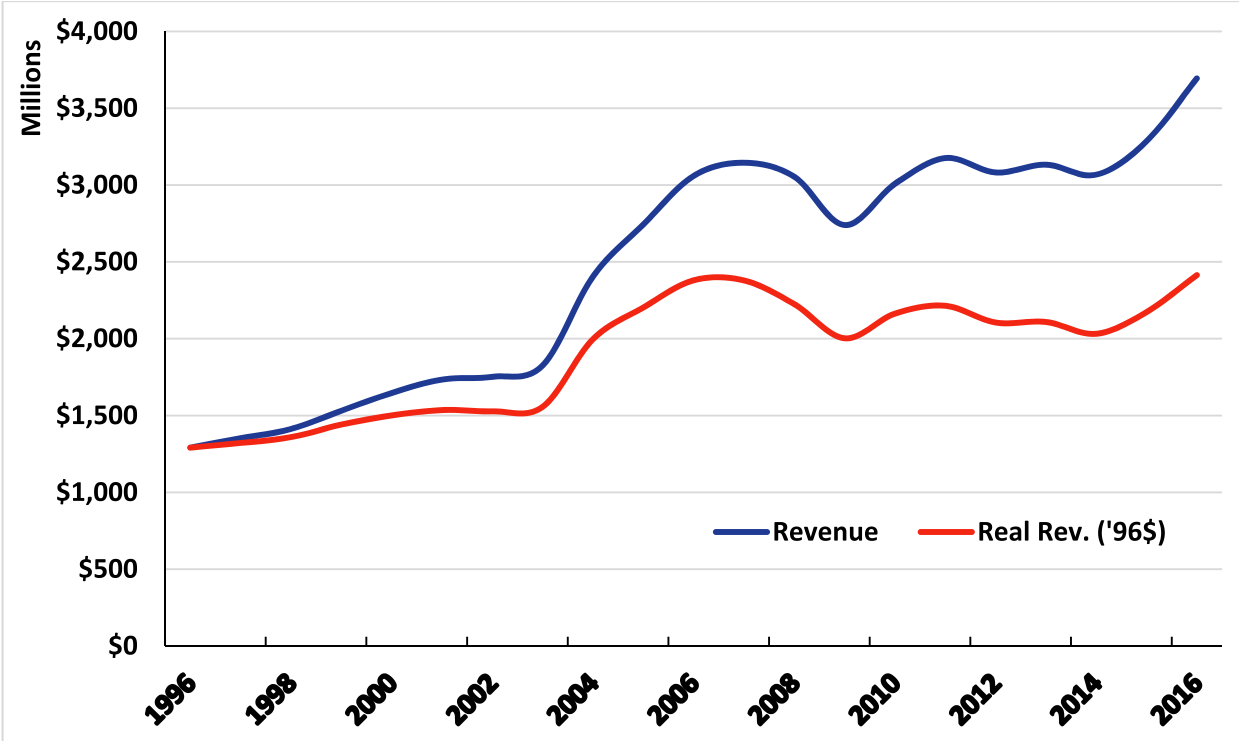
Figures

Figure II-1: Nevada Budget Funding*: FY-2015



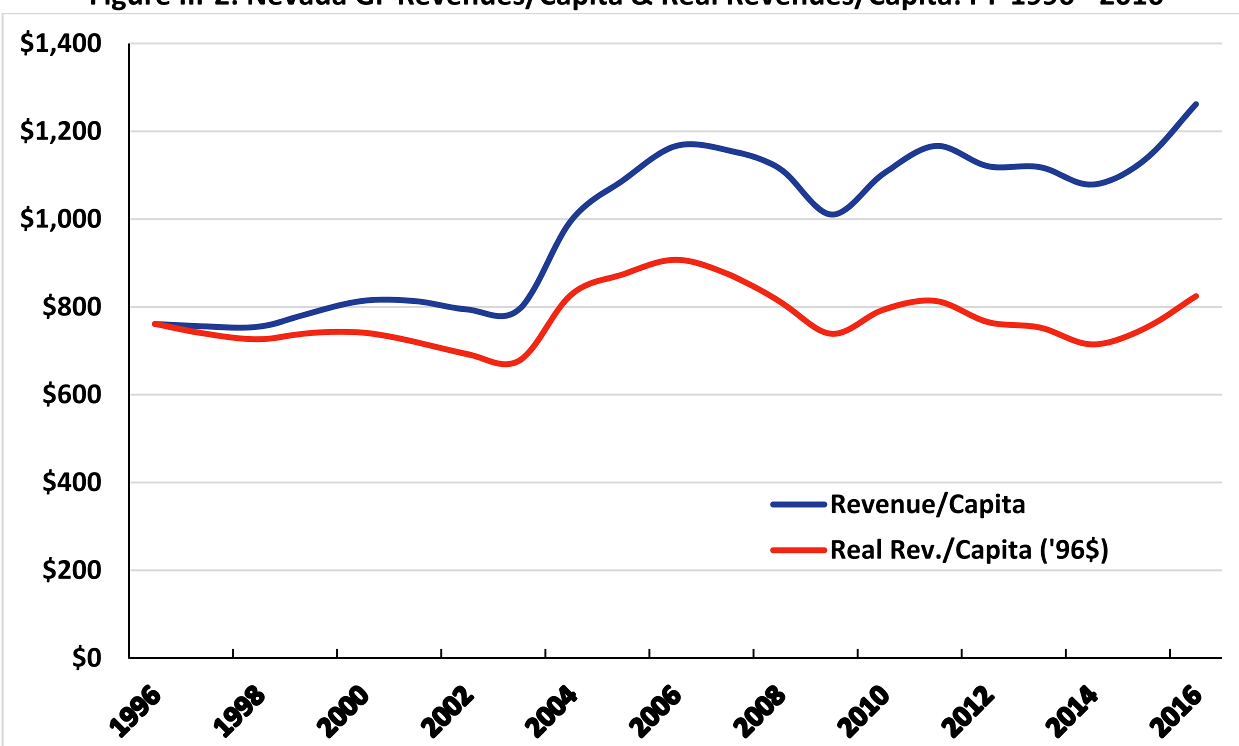
*Source: openbudget.nv.gov. *Note: Excludes Balance Forward, Reversion and Inter-Agency Transfers.*

Figure III-1: Nevada GF Revenues & Inflation-Adjusted ("Real") Revenues: FY-1996 - 2016



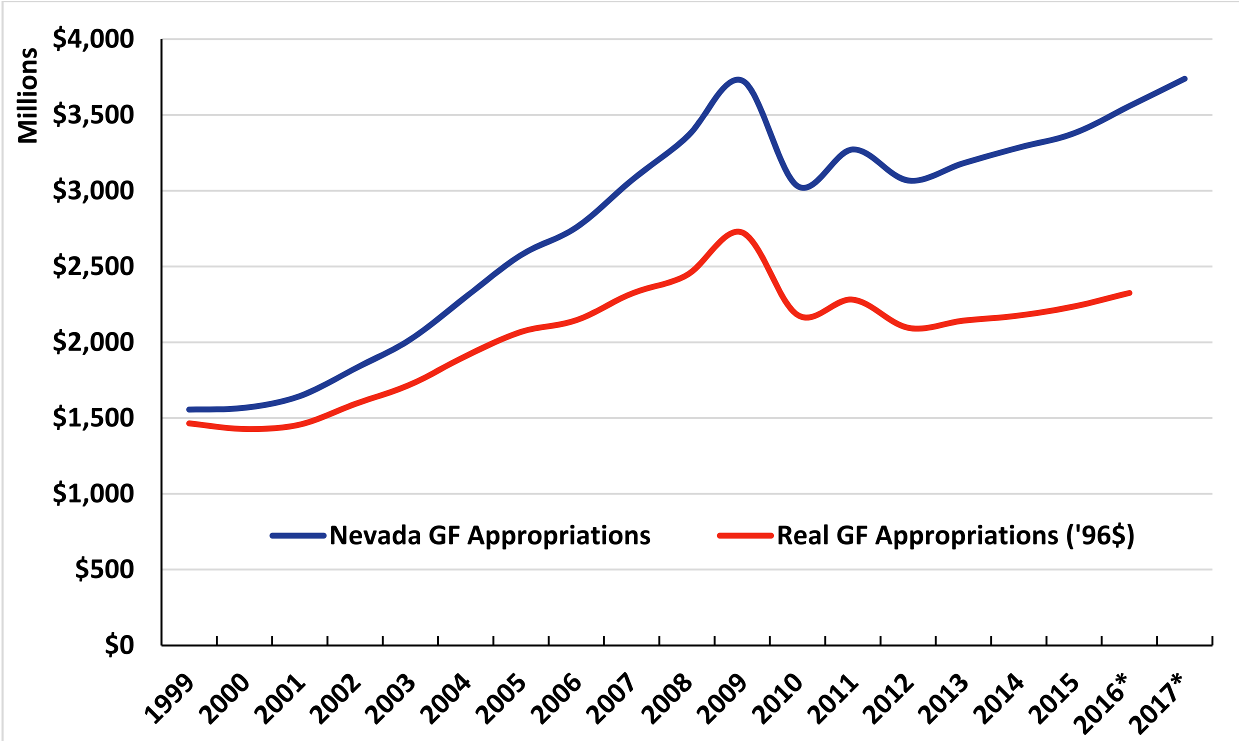
Sources: Nevada Revenue Reference Manuals 2003-2017, Bureau of Labor Statistics

Figure III-2: Nevada GF Revenues/Capita & Real Revenues/Capita: FY-1996 - 2016



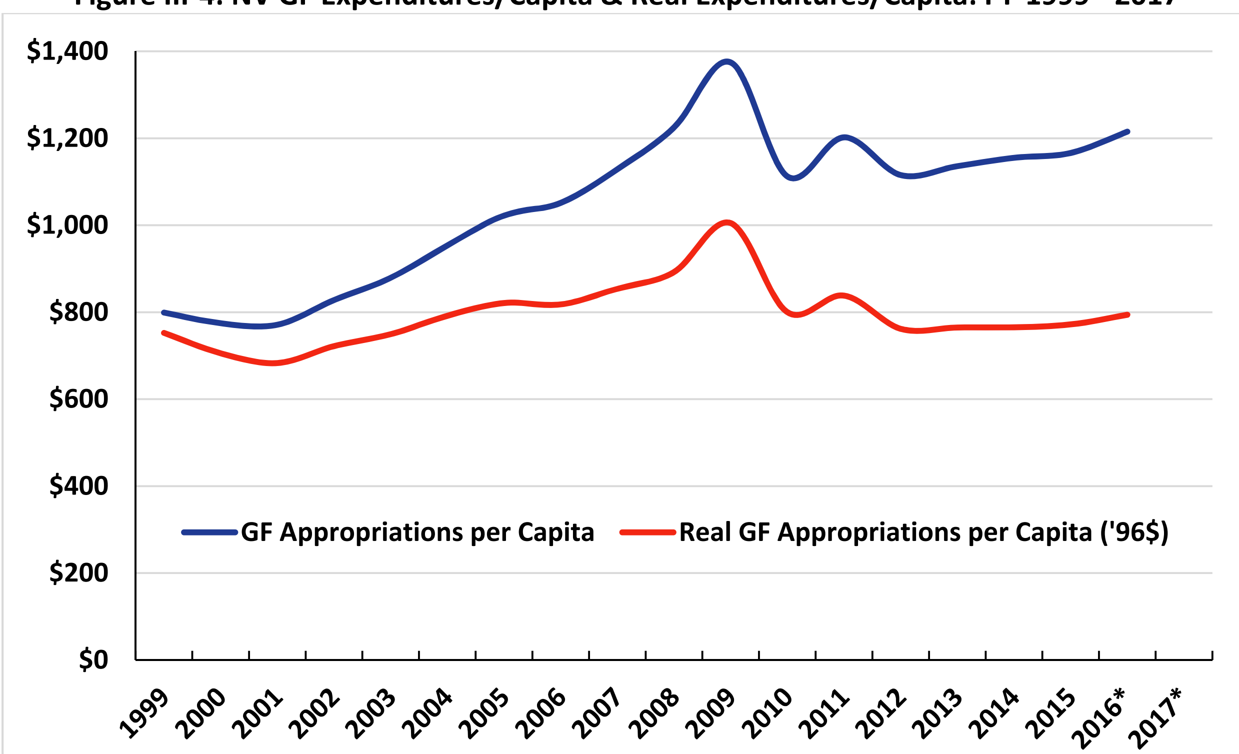
Sources: Nevada Revenue Reference Manuals 2003-2017, Bureau of Labor Statistics, Nevada State Demographer

Figure III-3: Nevada GF Expenditures & Real Expenditures: FY-1999 - 2017



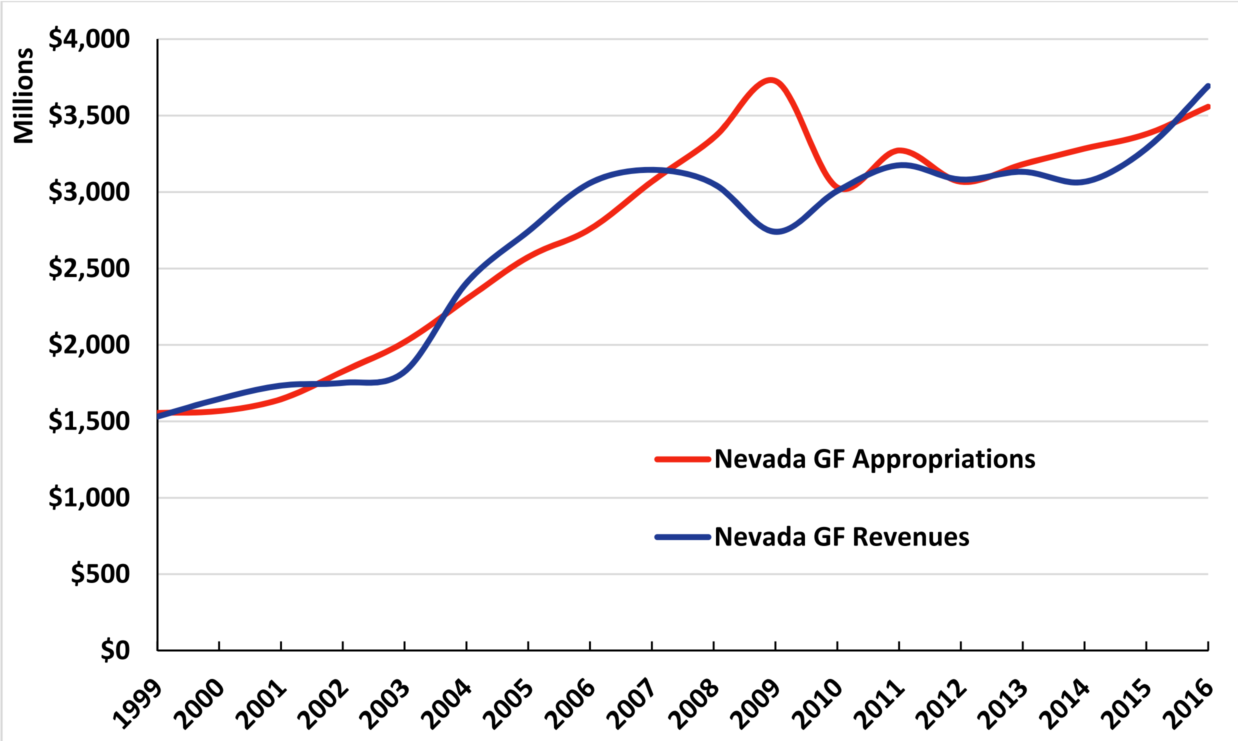
Sources: Nevada Legislative Appropriations Report (1999-2015), Bureau of Labor Statistics

Figure III-4: NV GF Expenditures/Capita & Real Expenditures/Capita: FY-1999 - 2017



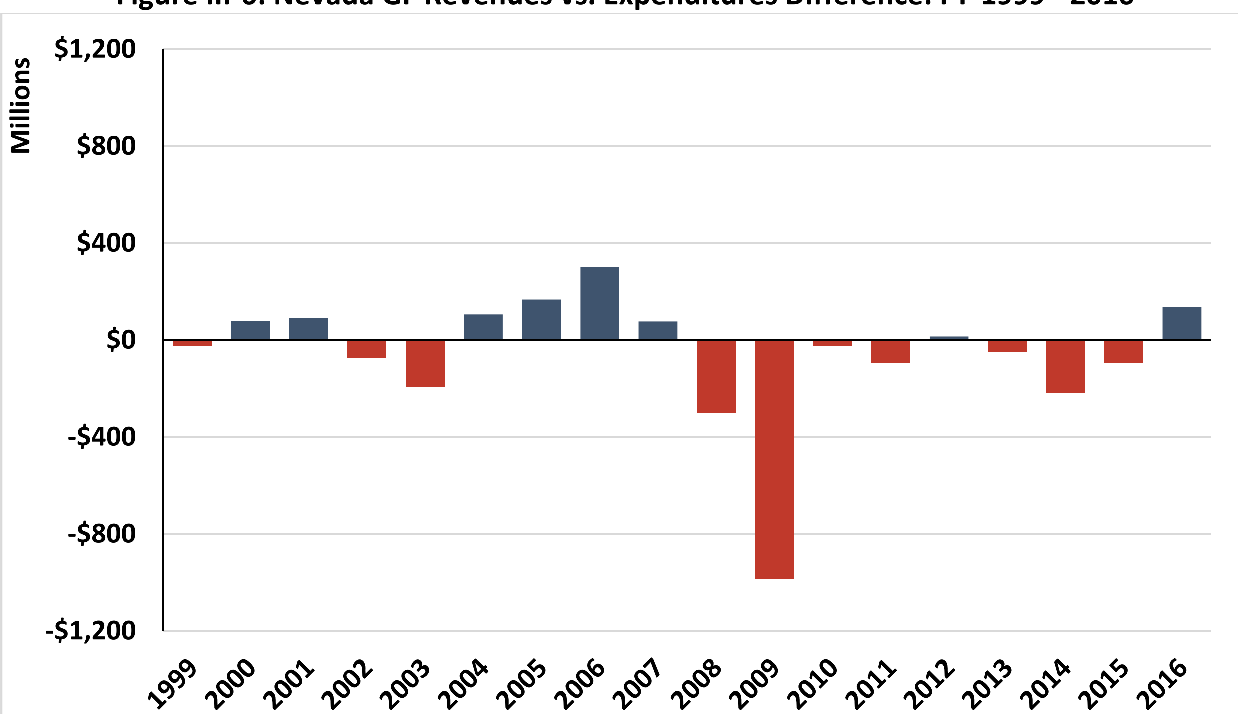
Sources: Nevada Legislative Appropriations Report (1999-2015), Bureau of Labor Statistics

Figure III-5: Nevada GF Revenues vs. Expenditures: FY-1999 - 2016



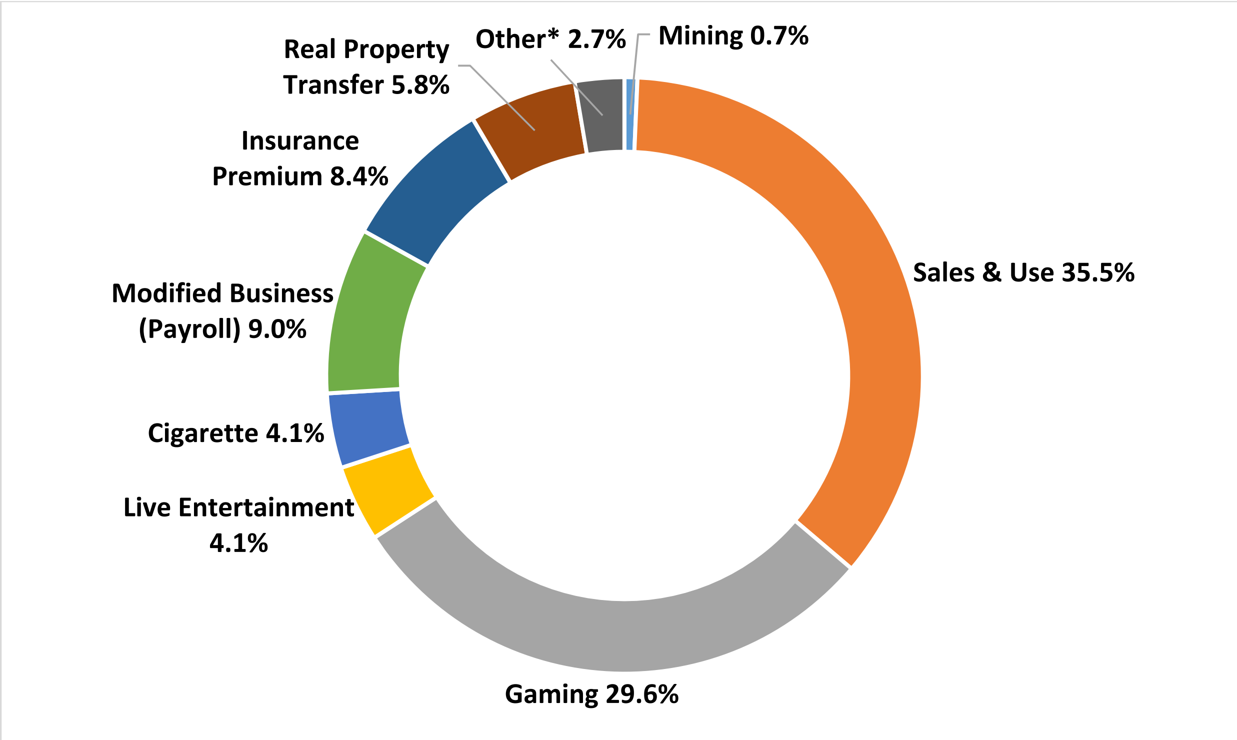
Sources: Nevada Legislative Appropriations Report (1999-2015), Revenue Reference Manuals (2003-2017)

Figure III-6: Nevada GF Revenues vs. Expenditures Difference: FY-1999 - 2016



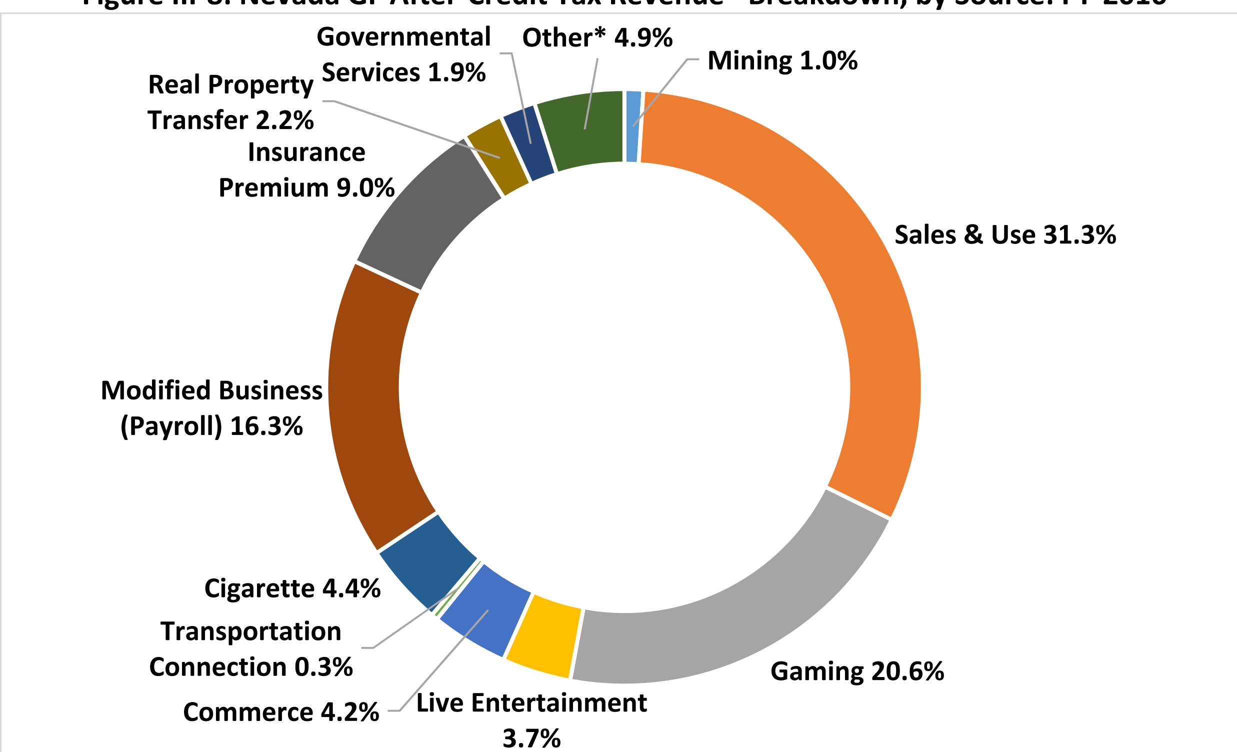
Sources: Nevada Legislative Appropriations Report (1999-2015), Revenue Reference Manuals (2003-2017)

Figure III-7: Nevada GF After-Credit Tax Revenue* Breakdown, by Source: FY-2006



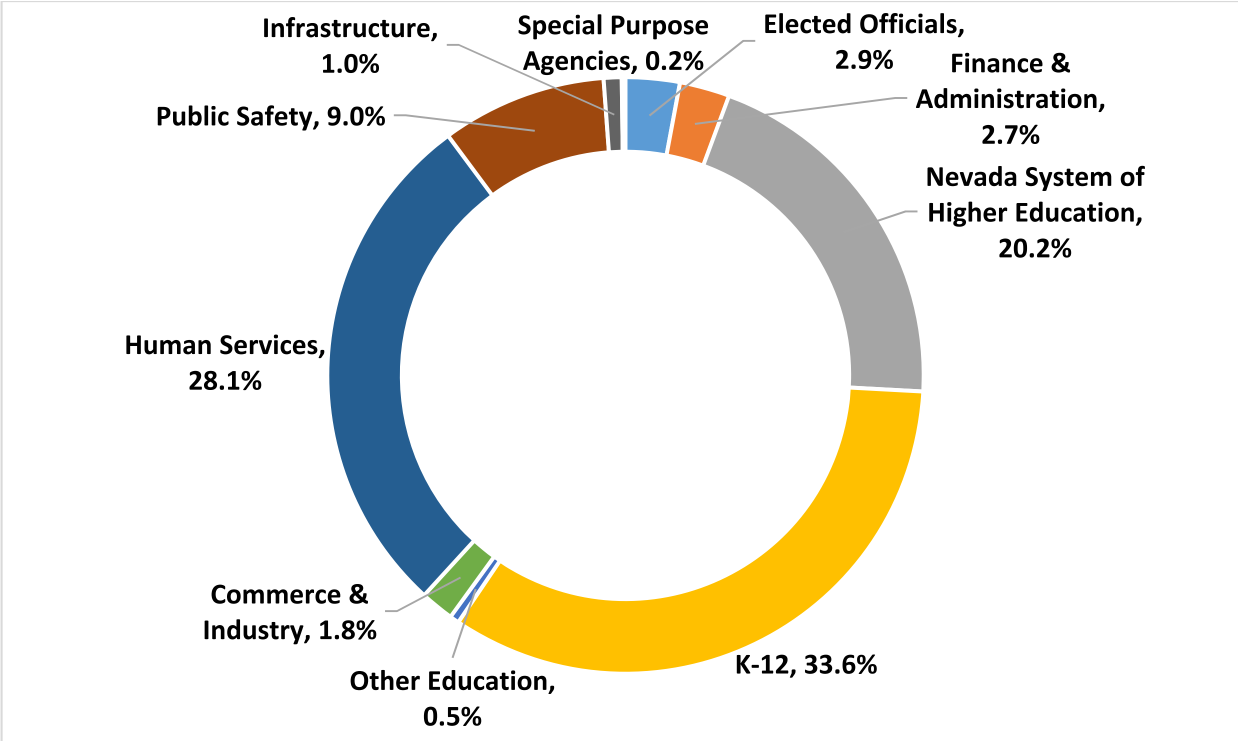
*Source: Nevada Revenue Reference Manual 2009. *Note: Does not include revenue from fees.*

Figure III-8: Nevada GF After-Credit Tax Revenue* Breakdown, by Source: FY-2016



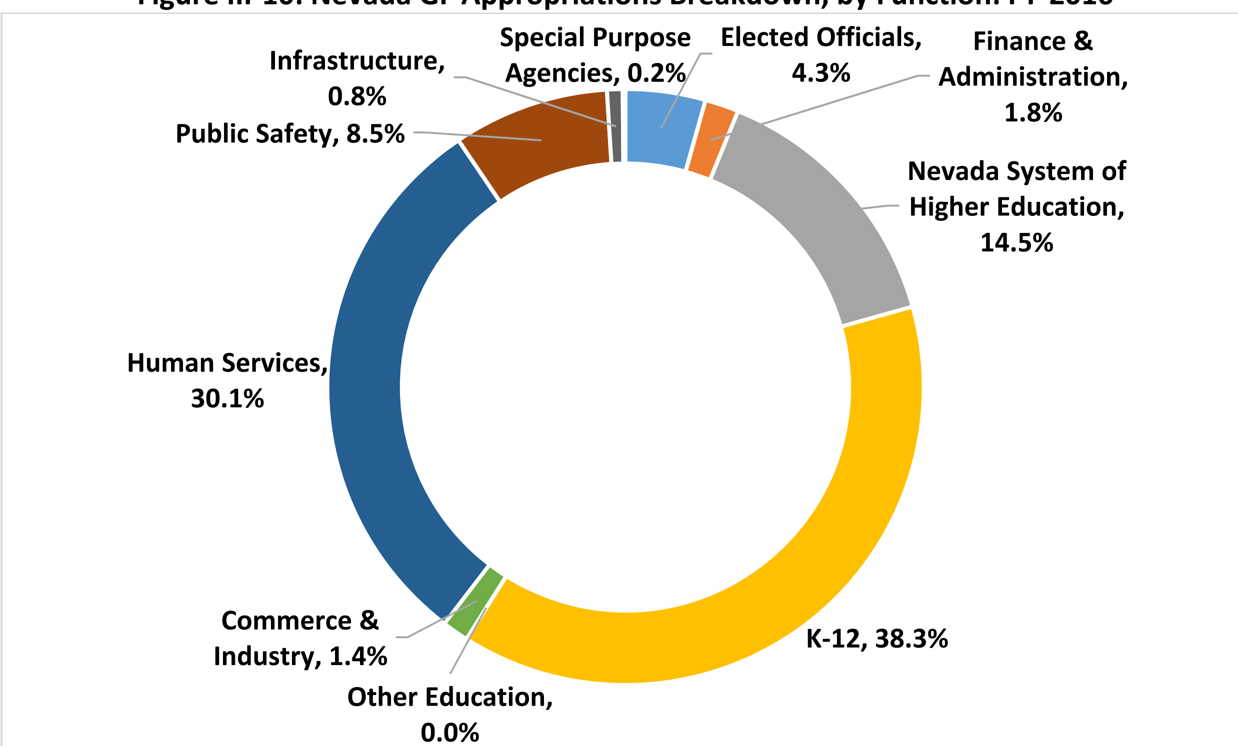
*Source: Nevada Revenue Reference Manual 2017. *Note: Does not include revenue from fees.*

Figure III-9: Nevada GF Appropriations Breakdown, by Function: FY-2006



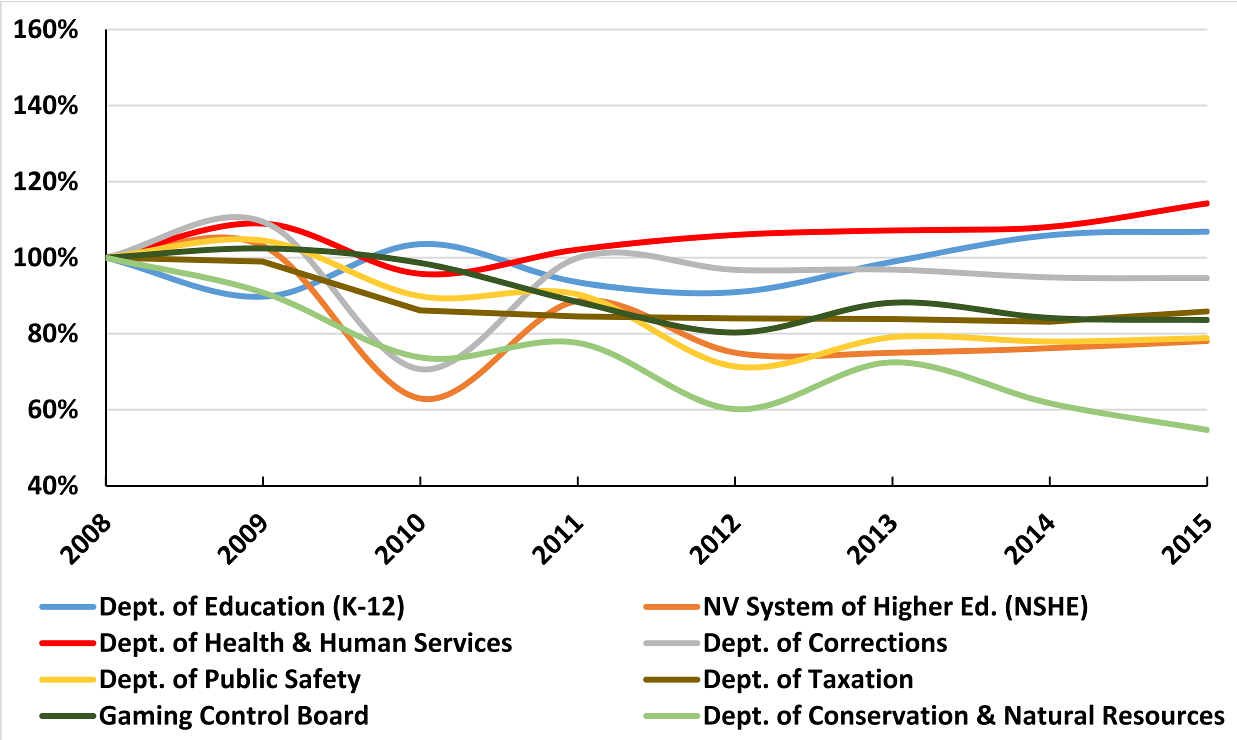
Source: Nevada Legislative Appropriations Report: 2005

Figure III-10: Nevada GF Appropriations Breakdown, by Function: FY-2016



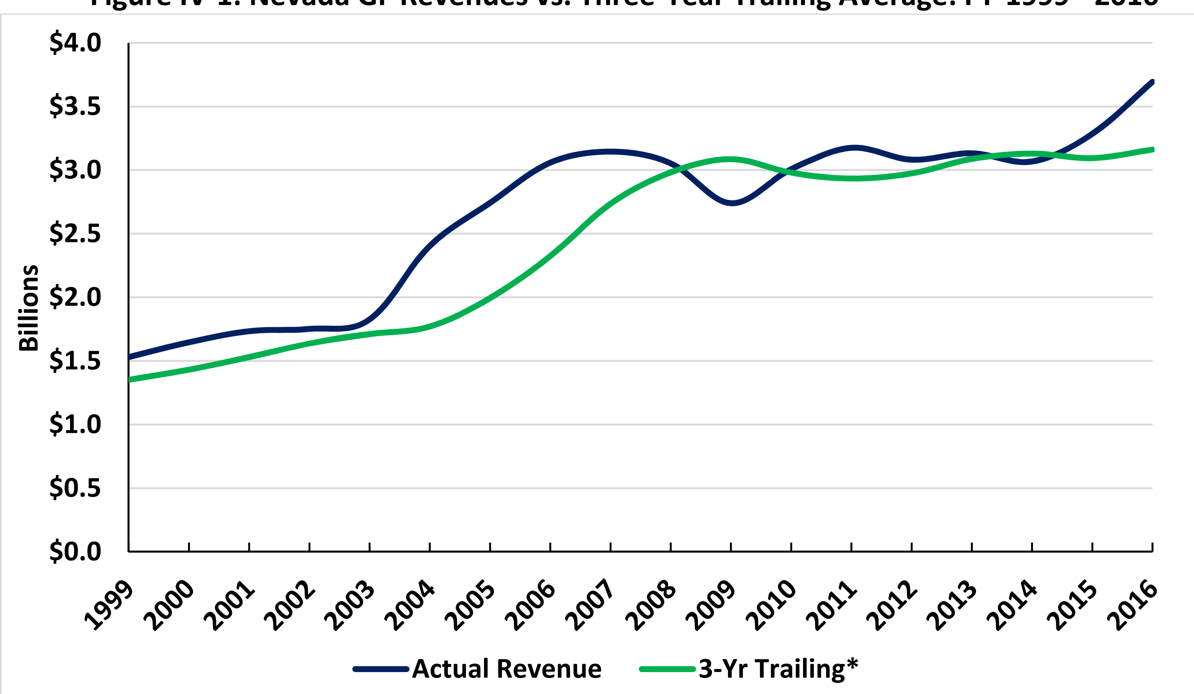
Source: Nevada Legislative Appropriations Report: 2015

Figure III-11: Nevada GF Appropriations Breakdown, by Department*: FY-2008 - 2015



*Source: www.openbudget.nv.gov. *Note: Includes only departments with appropriations of $30 million or more in 2015.*

Figure IV-1: Nevada GF Revenues vs. Three-Year Trailing Average: FY-1999 - 2016



Sources: Nevada Revenue Reference Manuals 2003-2017, RCG Economics