

Which States Are the Takers?

By Miles Hamby, PhD
April 17, 2017

In 2010, Republican Congressman Paul Ryan stated "Right now about 60 percent of the American people get more benefits in dollar value from the federal government than they pay back in taxes . . . So we're going to a majority of takers versus makers."ⁱ Later, Ryan down-graded the proportion of "takers" to 30 percent.

So, who are the "takers"? In the article "BLUEXIT: A Modest Proposal for Separating Blue States from Red" (New Republic Magazine, March 9, 2017)ⁱⁱ, author Kevin Baker posits "Red states are nearly twice as dependent on the federal government as blue states", suggesting that the 'Red' states, whose electoral votes went totally for Republican Donald Trump in the 2016 general election (the 'Blue' states votes going for Democrat Hillary Clinton), derive considerably more benefit from the Federal Government than the taxes they pay to the Federal government and further insisting that Blue states ". . . have shelled out far more in federal tax monies than we [Blue states] took in."

Baker further states "Of the twelve states that received the least federal aid in return for each tax dollar they contribute to the U.S. Treasury, ten of them voted for Hillary Clinton . . . By the same count, 20 of the 26 states most dependent on federal aid went to Trump." Although trying to argue a case that Red states are greater 'takers' than Blue states, this statement is confusing. What does Baker mean by "states most dependent on Federal aid"? Based on 2015 Funding and Tax data I found (see footnote references), if he means states receiving the most Federal funding, then only 13 of the highest 26 states were Red states, exactly half. If he means states with the highest Federal Funding to Tax Payments ratio, (i.e., they receive a higher proportion of funding to taxes they pay) then the number is 18 Red states in the highest 26. Further, parceling out the states unevenly with the lowest 12 being compared to the highest 26 makes a statistician wince! It is the old adage "comparing apples to oranges" and grossly biases the reader's inference toward the desired bias – that Blue states do not "take" as much as the Red states. To be more unbiased, the population of states should be divided evenly into quartiles, or more simply, into halves. Thus, this should be stated that of the 26 states that received the least federal aid in return for each tax dollar they contribute to the U.S. Treasury, 18 of them were Blue. By stating it "10 out of 12", the reader subconsciously infers "20 out of 24", which is not correct. Right after that 12th one, there appeared 8 more Red states and only 6 Blue.

Reading the entire article, it becomes clear that the author's point was not to present a fact-based argument against Republicanism but to express his opinion. However, his peculiar style of writing and exiguous citation of sources for his data cast serious doubt on the voracity of his premise. In other words, I didn't believe it. So, I decided to see for myself using original source data.

My Hypothesis. My hypothesis (emanating from Baker's article) was that there is a statistically significant difference between Red states and Blue states of the 2012 and 2016 general elections in the Federal Funding they receive in proportion to the amount of tax revenue the state pays to the federal

government. I collected data posted on the National Priorities Projectⁱⁱⁱ website that were obtained from the Office of Management and Budget. I validated these data by visiting several other websites and cross-checking the numbers and determined, based on my expertise as a statistician, they were all within reasonable and practical accuracy for the purpose of this study.

My Methodology. I composed an ExcelTM spreadsheet by state listing the total Federal dollars given to each state for 30 categories of funding for Federal Fiscal Years 2013, 2014, and 2015 (2016 data were not available)^{iv}: Special Education Grants, Title 1 College & Career Ready Students Grants, Universal Service Fund E Rate, Grants for Clean Water State Revolving Fund, Grants for Drinking Water State Revolving, Children and Adult Care Food Grants, School Lunch Program, School Breakfast Program, Supplemental Nutrition for Women, Infants, Children, Supplemental Nutrition Assistance program (SNAP) State Administration Matching Funds, Community Development Block Grant, Headstart, Public Housing Capital Fund, Public Housing Operating Fund, Section 8 Housing Choice Fund, Social Services Block Grant, Vocational Rehabilitation Grant, Child Health Insurance Program, Medicaid Grants, Adoption Assistance, Child Care and Development Block Grant, Child Care and Development Fund-Mandatory, Child Care and Development-State Matching, Child Support Enforcement, Foster Care Title 4E, Low Income Energy Assistance, Temporary Assistance to Needy Families (TANF), Airport Improvement, Highway Planning and Construction, and Transit Formula Grants. I collected Gross and Per Capita Federal Tax Revenues paid by each state for FY2012 and FY2015.^v I also collected the Gross State Product (GSP)^{vi} for each state for 2012 and 2015^{vii}, corroborating the data with other GSP data posted on other websites. The data for 2015 are presented in Table 1 – Federal Funding, Taxes Paid to Federal government, and Gross State Product (in Billions).

I then calculated, for each state: (1) the ratio of Gross Federal Funding to Gross Taxes Paid to the Federal Government for 2012 and 2015; and (2) the ratio of Gross Federal Funding to GSP for 2012 and 2015. With these variables, using a t-test, I then tested several statistical hypotheses:

Ha1_{FedFund}: $\mu_{red} > \mu_{blue}$, where μ_{red} and μ_{blue} are the means of Per Capita Federal Funding for 2015 for Red and Blue states, that is, Per Capita Federal Funding for Red states is statistically significantly higher than Blue states;

Ha2_{Fund/Tax}: $\mu_{red} > \mu_{blue}$, where μ_{red} and μ_{blue} are the mean ratios of Gross Federal Funding to Gross Tax Payments to the Federal Government for 2013 and 2015, that is, the ratio of Red states is statistically significantly higher than Blue states (i.e, Red states “take” more from the Federal government than Blue states);

Ha4_{Fund/GSP}: $\mu_{red} > \mu_{blue}$, where μ_{red} and μ_{blue} are the mean ratios of Federal Funding to Gross State Product for 2013 and 2015 for Red and Blue states, that is, the ratio of Red states is statistically significantly higher than Blue states.

I could not readily obtain original data for 2012, so used 2013 data that I could get as a practical approximation for the status of the states in 2012 at the election. I used 2015 data for the 2016 election because the 2016 data are not yet available and as the 2016 election was only one year after the 2015 data, I felt the 2015 data would still be representative of funding for the 2016 election. I tested the respective data against the Red/Blue categories from the 2012 election and from the 2016 election.

My Results. Results of the statistical procedures are presented in Table 2 – Federal Funding and Ratios of Payments-to-Federal Government and GSP by Blue/Red Vote. There was no statistically significant difference between Federal Funding for Blue and Red states for 2015. However, the ratios for Federal Funding to Tax Payments to the Federal Government and for Federal Funding to Gross State Product were statistically higher for Red states.

My Interpretation. In lay terms, I wanted to corroborate Baker’s premise that there was a difference between Red and Blue states in the proportion of their GSP and monies paid to the Federal government and the amount of Federal funding the states took in. I divided the states into two categories for each of the 2012 and 2016 general elections – Red for states whose popular vote was won by Trump and Blue for states won by Clinton – and tested those ratios with respect to the Red and Blue categories.

In his article “Which States Are the Biggest Takers?” (March 2017), author John Tierney presents data tables addressing a similar hypothesis he quotes from WalletHub analysts in their 2014 Report on Best and Worst States to Be a Taxpayer: “It’s not just that some states are getting way more in return for their federal tax dollars, but the disproportionate amount of federal aid that some states receive allows them to keep their own taxes artificially low.” The data Tierney presents shows a much larger ratio of Federal Funding to Tax Payments than mine. After investigation, I found his data included Social Security, Medicare, military spending within the respective state, and a host of other Federal funding not necessary directly to the state. He reaches a similar conclusion but the subconscious inferences could be misleading.

I found that, with respect to the Red/Blue makeup for 2012 and 2016 elections, Red states are statistically more likely to receive a higher proportion of Federal funding to the taxes they pay to the Federal government and to their GSP. When the data are put in a multiple regression, the resulting correlation between 2015 Federal Funding to Tax Payments ratio and Red v. Blue states is moderate, $R = .21$. This derives a Coefficient of Determination (R^2) of .044 meaning that only 4.4 percent of the variation between the ratios of the states is explained by being either a Red or a Blue. In other words, there is a LOT more going on in the funding than just being a Red or a Blue state!

My Conclusion. Some time ago, after 40 years of voting Republican, I finally started looking critically at the evidence. You need not try to convince me that Republicanism is widening the wealth gap along with adding a host of other ills to the country. You are preaching to the choir. However, even my results are not a convincing argument that Red states are hypocrites who profess total opposition to the redistribution of wealth while holding their hands out.

Thus, the article seems more appropriate for what I call “BCN” – Bias Confirmation News. The most infamous examples are Fox News for the Republicans and MSNBC for the Anti-Republicans. If all you are doing is confirming your base’s bias, then you can get away with weak arguments supported by biased presentation and rhetoric. But, if one genuinely wishes to convince someone of a point of view, then I think one should be much more circumspect about the “facts” lest they be regarded as “alternative”.

Table 1 – Federal Funding, Taxes Paid to Federal government, and Gross State Product (in Billions)

STATE	12/16 Vote	2013FedFund*	2013GSP	2013TaxToFed**	2015FedFund*	2015TaxToFed**	2015GSP
California	B/B	\$60.99	\$2,043.5	\$334.4	\$69.9	\$405.9	\$2,448.5
Colorado	B/B	\$5.23	\$284.5	\$46.5	\$6.8	\$47.2	\$318.6
Connecticut	B/B	\$6.02	\$231.4	\$53.7	\$6.7	\$59.2	\$262.2
Delaware	B/B	\$1.57	\$67.0	\$20.1	\$1.7	\$22.6	\$66.2
District of Columbia	B/B	\$2.81	\$109.2	\$24.5	\$3.1	\$25.6	\$122.9
Hawaii	B/B	\$1.83	\$73.8	\$7.1	\$2.1	\$8.2	\$79.6
Illinois	B/B	\$17.06	\$701.5	\$137.1	\$17.6	\$158.0	\$771.9
Maine	B/B	\$2.79	\$54.1	\$6.7	\$2.5	\$7.5	\$55.1
Maryland	B/B	\$7.65	\$317.7	\$56.3	\$8.0	\$63.9	\$365.2
Massachusetts	B/B	\$11.85	\$410.3	\$90.5	\$13.5	\$108.0	\$478.9
Minnesota	B/B	\$7.26	\$303.0	\$90.7	\$8.9	\$106.9	\$334.8
Nevada	B/B	\$2.48	\$134.9	\$15.9	\$3.1	\$18.5	\$141.2
New Hampshire	B/B	\$1.34	\$65.3	\$10.0	\$1.4	\$11.3	\$71.6
New Jersey	B/B	\$12.08	\$513.6	\$128.1	\$15.8	\$153.9	\$579.4
New Mexico	B/B	\$4.01	\$81.8	\$8.5	\$4.9	\$9.0	\$90.8
New York	B/B	\$44.86	\$1,214.4	\$231.9	\$52.8	\$269.7	\$1,455.6
Oregon	B/B	\$5.97	\$204.1	\$25.7	\$7.3	\$31.2	\$228.1
Pennsylvania	R/B	\$20.17	\$605.1	\$120.4	\$20.6	\$136.1	\$684.3
Rhode Island	B/B	\$2.01	\$51.7	\$13.0	\$2.2	\$14.4	\$56.3
Vermont	B/B	\$1.51	\$27.8	\$4.0	\$1.5	\$4.5	\$29.8
Virginia	B/B	\$7.94	\$446.3	\$71.4	\$8.6	\$80.2	\$480.9
Washington	B/B	\$8.20	\$385.9	\$59.9	\$8.5	\$73.3	\$449.4
Wisconsin	B/B	\$7.73	\$266.0	\$46.4	\$8.0	\$51.7	\$300.7
Alabama	R/R	\$6.74	\$185.0	\$23.8	\$7.2	\$25.1	\$209.4
Alaska	R/R	\$2.21	\$50.6	\$5.3	\$2.3	\$5.7	\$54.3
Arizona	R/R	\$9.33	\$269.8	\$36.8	\$11.5	\$42.6	\$298.2
Arkansas	R/R	\$5.16	\$112.2	\$28.8	\$6.7	\$32.5	\$123.4
Florida	B/R	\$20.56	\$794.3	\$141.2	\$23.1	\$177.4	\$893.2
Georgia	R/R	\$12.21	\$441.4	\$74.3	\$12.4	\$86.4	\$501.2
Idaho	R/R	\$2.16	\$60.6	\$8.7	\$2.0	\$9.8	\$65.2
Indiana	R/R	\$9.31	\$304.9	\$51.0	\$10.0	\$58.0	\$331.1
Iowa	B/R	\$4.17	\$156.9	\$21.2	\$4.1	\$24.0	\$171.5
Kansas	R/R	\$3.09	\$140.3	\$24.7	\$3.2	\$27.0	\$149.1
Kentucky	R/R	\$7.27	\$176.2	\$27.7	\$8.9	\$32.7	\$194.6
Louisiana	R/R	\$8.06	\$246.4	\$40.2	\$8.6	\$42.6	\$253.5
Michigan	B/R	\$14.63	\$408.5	\$68.9	\$17.6	\$77.9	\$468.0
Mississippi	R/R	\$5.90	\$103.1	\$10.4	\$6.3	\$11.5	\$106.9
Missouri	R/R	\$9.33	\$260.9	\$54.4	\$10.0	\$64.1	\$290.7
Montana	R/R	\$1.72	\$41.6	\$5.0	\$1.7	\$5.8	\$45.8
Nebraska	R/R	\$2.22	\$102.5	\$23.8	\$2.2	\$25.1	\$112.2
North Carolina	R/R	\$13.60	\$466.5	\$66.1	\$13.9	\$78.7	\$509.7
North Dakota	R/R	\$1.12	\$50.5	\$7.6	\$1.4	\$7.7	\$53.7
Ohio	B/R	\$18.49	\$518.6	\$124.7	\$20.4	\$141.0	\$599.1
Oklahoma	R/R	\$5.54	\$167.7	\$30.1	\$5.9	\$33.9	\$179.8
South Carolina	R/R	\$6.10	\$178.3	\$20.4	\$6.3	\$24.1	\$199.3
South Dakota	R/R	\$1.17	\$43.9	\$6.3	\$1.2	\$7.7	\$45.4
Tennessee	R/R	\$9.79	\$279.3	\$53.9	\$11.4	\$62.7	\$310.3
Texas	R/R	\$32.49	\$1,449.1	\$249.9	\$36.6	\$279.9	\$1,639.4
Utah	R/R	\$2.96	\$135.4	\$17.7	\$3.1	\$20.2	\$148.2
West Virginia	R/R	\$3.75	\$72.9	\$6.8	\$4.1	\$7.4	\$71.1
Wyoming	R/R	\$0.87	\$41.3	\$5.3	\$0.9	\$5.3	\$40.2

* Includes Special Education Grants, Title 1 College & Career Ready Students Grants, Universal Service Fund E Rate, Grants for Clean Water State Revolving Fund, Grants for Drinking Water State Revolving, Children and Adult Care Food Grants, School Lunch Program, School Breakfast Program, Supplemental Nutrition for Women, Infants, Children, Supplemental Nutrition Assistance program (SNAP) State Administration Matching Funds, Community Development Block Grant, Headstart, Public Housing Capital Fund, Public Housing Operating Fund, Section 8 Housing Choice Fund, Social Services Block Grant, Vocational Rehabilitation Grant, Child Health Insurance Program, Medicaid Grants, Adoption Assistance, Child Care and Development Block Grant, Child Care and Development Fund-Mandatory, Child Care and Development-State Matching, Child Support Enforcement, Foster Care Title 4E, Low Income Energy Assistance, Temporary Assistance to Needy Families (TANF), Airport Improvement, Highway Planning and Construction, and Transit Formula Grants. Does not include Social Security, Medicare, military spending, ordinary civilian federal spending and civilian research facilities.

**Includes all individual and corporate income taxes, payroll taxes, estate taxes, gift taxes, and excise taxes. Does not include federal tax revenue data from U.S. Armed Forces personnel stationed overseas, U.S. territories other than Puerto Rico, and U.S. citizens and legal residents living abroad, even though they may be required to pay federal taxes

Table 2 – Comparison of Federal Funding to GSP and Tax Payments to Federal Government by Blue/Red States Ratios, t-test (assuming equal variances)

Ratios	2013 FedFund/2013GSP 2012 Vote		2013 FedFund/TaxToFed 2012 Vote		2015 Federal Funding		2015 FedFund/GSP 2016 Vote		2015 FedFund/TaxToFed 2016 Vote	
	Blue	Red	Blue	Red	Red	Blue	Red	Red	Blue	Red
Mean	2.9%	3.3%	17.9%	23.5%	\$12.0B	\$8.7B	2.9%	3.3%	17.5%	22.1%
Observations	26	25	26	25	23	28	23	28	23	28
Hypothesized Difference (Null)	0		0		0		0		0	
df	49		49		49		49		49	
t Stat	-1.50*		-1.80*		0.92		-1.48*		-1.47*	
P(B< R), one-tail	0.07		0.04		0.18		0.07		0.07	
t-Critical, one-tail	1.68		1.68		1.68		1.68		1.68	
Sig. Level	0.10		0.05		Not significant		0.10		0.10	
B/R higher ratio?	Red higher		Red higher		No difference		Red higher		Red higher	
Interpretation	Red states receive higher proportion of Federal funding to their GSP than Blue, 2012 Vote		Red states receive higher proportion of Federal funding to Taxes they pay to the Federal Government, 2012 Vote		There is no difference in Federal funding between Red and Blue states for 2015		Red states receive higher proportion of Federal funding to their GSP than Blue, 2016 Vote		Red states receive higher proportion of Federal funding to Taxes they pay to the Federal Government, 2016 Vote	

* Alternate hypothesis tested was Blue > Red, thus, a negative number indicates Red mean was greater than Blue

ⁱ Crow, B., and Carter, Z. (2012). Paul Ryan: 60 Percent Of Americans Are 'Takers,' Not 'Makers'. Huffington Post, Oct 5, 2012. Retrieved April 9, 2017, from http://www.huffingtonpost.com/2012/10/05/paul-ryan-60-percent-of-a_n_1943073.html

ⁱⁱ Baker, K. (2017). Blueexit: A Modest Proposal For Separating Blue States From Red. New Republic Magazine. Retrieved April 9, 2017, from <https://newrepublic.com/article/140948/bluexit-blue-states-exit-trump-red-america>

ⁱⁱⁱ National Priorities Project Mission Statement. "National Priorities Project (NPP) inspires individuals and movements to take action so our federal resources prioritize peace, shared prosperity, and economic security for all. We are the people's guide to the federal budget. In 2014, NPP was nominated for the Nobel Peace Prize in recognition of our pioneering work to track federal spending on the military and promote a U.S. federal budget that represents Americans' priorities, including funding for people's issues such as inequality, unemployment, education, health and the need to build a green economy. retrieved April 9, 2017, from <https://www.nationalpriorities.org>

^{iv} Dana, S. (2014). Federal Spending in Your State, 2013-2015. National Priorities Project. Retrieved July 9, 2017, from <https://www.nationalpriorities.org/analysis/2014/federal-spending-your-state-2013-2015/>

^v Tax Revenue by State 2015. "The figure includes all individual and corporate income taxes, payroll taxes, estate taxes, gift taxes, and excise taxes. Does not include federal tax revenue data from U.S. Armed Forces personnel stationed overseas, U.S. territories other than Puerto Rico, and U.S. citizens and legal residents living abroad, even though they may be required to pay federal taxes." Retrieved April 9, 2017, from https://en.wikipedia.org/wiki/Federal_tax_revenue_by_state

^{vi} Center for Business and Economic Research, Haslam College of business (2013). Relation of GDP by state to U.S. Gross Domestic Product (GDP). An industry's GDP by state, or its value added, in practice, is calculated as the sum of incomes earned by labor and capital and the costs incurred in the production of goods and services. That is, it includes the wages and salaries that workers earn, the income earned by individual or joint entrepreneurs as well

as by corporations, and business taxes such as sales, property, and Federal excise taxes—that count as a business expense. Retrieved April 9, 2017, from <http://cber.haslam.utk.edu/bea/gspdata.htm>

^{vii} Gross domestic product (GDP) by state (millions of current dollars). U.S. Department of Commerce. Bureau of Economic Analysis. Retrieved Apr 9, 2017, from

[https://en.wikipedia.org/wiki/List_of_U.S._states_by_Gross_State_Product_\(GSP\)](https://en.wikipedia.org/wiki/List_of_U.S._states_by_Gross_State_Product_(GSP))Wikipedia,