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## Red States, Blue States: Examining Federal Transfers to the States, 1983-2004

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Following the 2004 presidential elections, red and blue colored maps circulated, dividing the United States into two colors by electoral vote allocated to the presidential candidates—typically red for the Republican electoral votes and blue for Democratic electoral votes. A preponderance of these maps attempted to explain many economic, social and political factors along this red-blue divide.<sup>1</sup>

A graphic of particular interest is one that shows the “blue states”—the states that voted the Democratic ticket in 2004 as the “losers” in federal funding received, while the “red states”—the states that voted the Republican ticket are the “winners,” receiving far more federal aid than the blue states in per capita and net transfer terms. Paradoxically, the “red state” values of self-reliance, free markets, small government and fiscal restraint put the American conservatives in power, and returned George W. Bush and the Republican congressional majority to power in 2004. This paper will take a recent historical perspective

**États bleus, États rouges : un examen des explications politiques des niveaux de transferts fédéraux aux États américains, 1983-2004**

*See p. 38 for English abstract*

#### **Résumé**

*Cette étude vise à expliquer les variations dans les niveaux de transfert de fonds fédéraux vers les États dans différents types de dépenses, soit les dépenses totales, les dépenses militaires, les contrats de fourniture de biens et services, les subventions directes, les prêts et assurances. Ce rapport met à jour les recherches existantes en utilisant des données électorales, démographiques, fiscales et économiques pour les États s'étalant sur 22 ans, de 1983 à 2004. En ayant recours à la méthode d'analyse statistique par « panel » du logiciel STATA, plusieurs variables économiques et politiques sont passées en revue pour évaluer leur impact pendant une période marquée par la résurgence du néo-conservatisme aux États-Unis. L'accent est mis notamment sur les variables interactives qui mettent en lumière l'alignement entre les partis qui occupent les fonctions exécutives et législatives au fédéral et dans les États.*

in examining federal transfers to the states and its political-economic components

Intergovernmental transfers and equity are a perpetual bone of contention amongst the Canadian provinces and between them and the federal government. Accordingly, there is a

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wealth of information and scholarly study on fiscal federalism in Canada. In the United States, however, there are few rigorously explained political-economic models that examine federal transfers to the states, taking into account explicit transfers by category, such as block grants and spending programs, as well the net fiscal benefit. The net fiscal benefit (NFB) is defined as the amount of public services received minus the amount of taxes paid. In this paper, the net fiscal benefit will be calculated for each state.

To test whether there is a political-economic rationale for the allocation of federal funds, this report will model the transfers from the federal government to the states in per capita and net transfer terms as dependent variables. Independent variables that will be considered include payments of federal income and corporation taxes from the states, population of the states, Electoral College representation and votes for the past twenty-two years, federal Congressional representation, state gubernatorial representation and state legislative representation.

## Section I: Literature Review and Analytical Framework

### Review of Existing Literature:

A partisan theory of federal budget allocation is a far from recent phenomenon and empirical studies abound in the literature. The majority of existing works focuses on the powers of the legislative branch of government at the federal level, particularly the impact of committee membership and that of individually powerful members of Congress. Studies on the impact of the president date back, in large part, to the New Deal presidency of Franklin D. Roosevelt.

However there are a few recent studies on the impact of the president in budget allocation, as well as annual studies of the federal budget and the States, a joint project between the Taubman Center for State and Local Government at the Kennedy School of Government at Harvard University and Senator Daniel Patrick Moynihan (Democrat of New York, 1976-2000). This report is then descriptive by nature, comparing the different states in the five major areas of expenditure defense, non-defense discretionary, Social Security, Medicare, and assistance programs. Following the death of Senator Moynihan, a similar report has not been published, although there is supposedly a report for 2003 in progress<sup>2</sup>.

A review of recent literature has both provided inspiration and guidance to our report. Some important literature includes:

*Slicing the Federal Government Net Spending Pie: Who Wins, Who Loses and Why*, Cary Atlas, Thomas Gilligan, Robert Hendershott and Mark Zupan (1995)

The authors examine the distribution of federal net spending, defined as taxes minus expenditures, across the fifty states from 1972 to 1990. The authors limit the scope of their inquiry to the legislative branch, and advance

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<sup>2</sup> Home page of lead report author, Herman B. "Dutch" Leonard shows the 2003 report as "in progress": [http://dor.hbs.edu/fi\\_redirect.ihtml?facInfo=pub&facEmlId=hleonard](http://dor.hbs.edu/fi_redirect.ihtml?facInfo=pub&facEmlId=hleonard)

the hypothesis of an “overrepresentation bias” that gives preference to small states. The paper examines the effect of this “overrepresentation bias,” and pays particular attention to the Senate, where a populous state such as California receives the same treatment as the far less populous Delaware. This paper was one of the first to account for this type of bias, and is often cited in subsequent literature.

*Allocating the U.S. Federal Budget to the States: The Impact of the President*, Valentino Larcinese, Leonzio Rizzo and Cecilia Testa (2006)

The paper provides empirical evidence on the determinants of the U.S. federal budget allocation to the states. Expanding and departing from existing literature that gives prominence to Congress and to vote-purchasing behavior with swing states and strongly supportive states, the authors conducted an empirical investigation on the impact of presidents during the period 1982–2000. This study takes the entire federal expenditure budget as the dependent variable. There are several separate hypothesis tested, with respect to presidential politics. States that heavily supported the incumbent president in past presidential elections tend to receive more funds, while marginal and swing states are not rewarded. Party affiliation is examined to the extent that the governor (state level executive branch) party affiliation is the same as the president. Larcinese et al find that states in which the executive branch party (the party of the governor) is aligned with the president’s political party receive more federal funds, while states opposing the president’s party in Congressional elections are penalized. They posit their results as evidence for presidential engagement in tactical distribution of federal funds and also as support for partisan theories of budget allocation.

There are several weaknesses to this approach, in that allocation of the federal budget is such that there is great flexibility in some categories of spending, whereas other categories are severely restricted by demographics, such as is the case with Medicare, a federal health-care program

universally applied to all Americans over the age of 65 eligible for Social Security payments. Medicare is one of the largest single-category federal transfers to the states, and the transfer is calculated using a universal formula that is functionally immune from major, pork-barrel type politically-biased manipulations. Conversely, there are certain spending categories in which different branches of the government have more leeway. For example, the president, as the head of the U.S. Military has some discretionary impact in defense spending.

*The Impact of Federal Spending on House Election Outcomes*, Steven Levitt and James M. Snyder (1997)

The paper examines vote-purchasing behavior in the House of Representatives, to the extent that incumbent members of Congress are rewarded (by re-election) for bringing federal dollars into their district. Using an instrumental variables model, Levitt and Snyder account for the omitted variable bias engendered by the potential variation in effort of representatives up for re-election. Incumbents expecting difficulty are expected to behave differently than those who do not, and thus may perhaps work harder to bring federal dollars to their district. Unfortunately, the time period covered in this paper is limited in scope to the eight years (1983-1990) covered by the Federal Assistance Awards Data System (FAADS), as this data set contained annual district-level outlays on a programmatic basis, totaling over half of the federal budget. Most importantly, the paper makes the distinction between high and low-variation programs, the high variation programs being more discretionary in nature and thus more amenable to political manipulation rather than direct entitlement programs, such as social security and Medicare. Nonetheless, the empirical evidence produced from this paper differs than that from previous studies, in that they find evidence that an increase in federal spending benefits congressional incumbents, “purchasing” as much as 2% of the popular vote with an additional \$100 in per capita spending.

**Table 1: Summary of Relevant Research**

Authors (year)	Subject	Variables	Data	Estimation Method	Results
C. Atlas, M. Zupan, T. Gilligan, and R. Hendershott (1995)	Allocation of net federal spending to the States	<p><u>Dependent variables:</u></p> <p>Per capita net federal spending; per capita entitlement spending; per capita defense spending</p> <p><u>Individual control variables:</u></p> <p>Per capita income, % rural population, % population with four-year degree, % over the age of 65, % receiving public assistance, per capita state and local taxes, coastal</p> <p><u>Overrepresentation variables:</u></p> <p>Representatives per capita; Senators per capita</p>	<p>1) Biannual political data from Almanac of American Politics (1972-1990)</p> <p>2) Biannual panel data from the Statistical Abstract of the United States, includes all data on population characteristics and federal net spending (1972-1990)</p>	Panel GLS estimation with state fixed effects using robust standard errors	<p>1) Senators from “overrepresented” states procure approximately \$787 more per capita in per capita federal spending; where as representatives from the same states obtain \$407 more per capita</p> <p>2) A similar effect is observed in categories of spending, with the largest effect shown in defense spending</p> <p>3) All else equal, congressional contingents from less populous states secure a significantly higher level of net federal spending for their constituents</p>
V. Larcinese, L. Rizzo, and C. Testa (2006)	Presidential impact on the allocation of the U.S. federal budget to the states	<p><u>Dependent variable:</u></p> <p>Federal expenditures per capita (real dollars)</p> <p><u>Individual Control variables:</u></p> <p>Senators per capita, electoral vote per capita, various demographic variables, income per capita, swing state, congressional membership in key committees</p> <p><u>Presidential alignment variables:</u></p> <p>President-governor alignment, president-senator alignment, president-representative alignment</p>	<p>1) Annual federal expenditures, population data from Statistical Abstract of the United States (1982-2000)</p> <p>2) Official Congressional Directory and Nelson and Benson (1993) for Congressional Committee membership and apportionment data</p>	Panel OLS estimation with a check for necessary standard-error corrections for multicollinearity using variance inflation factor (VIF) evaluation, robust standard errors	<p>1) States that heavily supported the incumbent president in past presidential elections tend to receive more funds</p> <p>2) A governor belong to the same party of the president receive more federal funds</p> <p>3) States opposing the president’s party in Congressional elections are penalized.</p> <p>4) Generally supports of partisan theories of budget</p>

Authors (year)	Subject	Variables	Data	Estimation Method	Results
					allocation.
S. Levitt, J. Snyder (1997)	Impact of federal spending on House election outcomes	<p><u>Dependent variable:</u> Per capita federal spending (in various categories) to a district</p> <p><u>Control variables:</u> Population characteristics, share of democratic vote, share of republican vote, % share in state per capita income, incumbency, closeness to the state's capitol city</p> <p><u>Instrumental variable:</u> In-state out-of-congressional district spending</p>	1) District-level outlays of spending from 1983-1990 from Bickers-Stein Federal Awards Assistance Data System, demographic and economic variables also from this data set	2SLS methods using in-state out-of-district spending as instrumental variable to solve the omitted variables problem of "effort" exerted by the incumbent to retain his or her seat, OLS used as baseline for comparison	<p>1) Instrumental variable approach yields coefficients that are five times larger than the OLS estimate</p> <p>2) Need to differentiate between different types of expenditures, namely high-variation and low-variation programs</p> <p>3) Evidence of vote-purchasing behavior: an increase of \$100 in per-capita spending shows a 2% increase in the incumbent's share of the popular vote</p>
B. Schor (2005)	Determinants of defense budget allocation	<p><u>Dependent variable:</u> Per capita federal defense spending (logarithmic form) to a district</p> <p><u>Control variables:</u> Population characteristics, share of democratic vote, share of republican vote, income per capita, district voting patterns during presidential election years</p>	<p>1) District-level outlays of spending from 1983-1992 using the Consolidated Federal Funds Report</p> <p>2) Current population survey (CPS) for demographic variables</p> <p>3) Congressional Quarterly for presidential vote totals</p> <p>4) Bureau of Economic Analysis for income totals</p>	Bayesian multilevel modeling using Markov Chain Monte Carlo simulations; rejects panel regressions using corrected standard errors	<p>1) No support for effective "targeting" of home states by House legislators.</p> <p>2) Delegations dominated by Democrats unable to deliver more to their states (Democrats were controlling party of House during entire time period)</p> <p>3) Highlights need to include predictors at different levels of analysis (e.g. federal, state, and interaction variables); previous literature assumes only local district level effects</p>

*The Determinants of Success of Special Interest in Redistributive Politics*, Avinash Dixit and John Londregan (1996)

Economic redistribution occurs on two levels in the political process, the first on a grand scale reflecting the economic beliefs of a country, and is achieved through taxation and social spending. On a secondary level, economic redistribution can occur more tactically, and can coincide with the grander scheme of redistribution, and can take on a variety of forms including subsidies, tax expenditures, public works projects and other schemes that are often labeled as “pork barrel.” This theoretical paper examines the determinants of whether a heterogeneous interest group will receive favors in pork-barrel politics, where there is majority voting in a two-party system. Individuals must choose between party affinity and their own transfer receipts. The results of this model can yield two different outcomes as special cases, which are the competing theories of the “swing voter” and “machine politics.” In the swing voter outcome, both parties are equally effective at delivering transfers and thus attempt to capture the middle, politically centrist ground through economic favors. The machine politics outcome is achieved if each party is more effective in delivering favors to its own support group, thus leading the political parties to reward its core supporters.

These results can be extrapolated on an aggregate level, as these results can be applied to groups of people at the state level, yielding either favors for swing states or rewarding those states that are stalwarts of either party. They suggest that that many economically inefficient policies with unequal allocation across a society fit well within this model of redistributive politics, that is, programs with a high potential for variance and unequal spending are often exploited to favor certain political outcomes in a two-party electoral system.

### Modeling Federal Transfers to the States:

The proposed economic models are:

$$\text{Federal Expenditures}_{stc} = \alpha t + \beta X_{st} + \delta Y_{st} + \theta Z_{st}$$

$$\text{Net fiscal benefit}_{stc} = \alpha t + \beta X_{st} + \delta Y_{st} + \theta Z_{st}$$

The dependent variable is expressed in total dollar terms.  $X$  is a vector representing demographic and economic data,  $Z$  is a vector representing political-institutional variables, and  $Y$  is an instrumental variable (when necessary) to correct for the well-documented overrepresentation bias, as well other measures to better document the effect of representatives in their district. The subscript “s” denotes the state, “t” the year, and “c” the category of expenditure or the net fiscal benefit. Regressions use random-effects GLS methods for panel data with STATA 9.0, using instrumental variables wherever necessary.

Three hypotheses are tested. The first two hypotheses correspond to federal spending categories (per the Consolidated Federal Funds Report) and the final hypothesis corresponds to the allocation of the net fiscal benefit.

#### **H1: Political alignment by various combinations of actors on the federal level and between the federal and state level is important (alignment with majority party) for certain federal spending categories.**

To test this hypothesis, the following model is proposed:

$$\begin{aligned} \text{Expenditure category}_{st} = & \text{population}_{st} + \text{per} \\ & \text{capita tax burden}_{st} + \text{gross state product per} \\ & \text{capita}_{st} + \text{gross state product per capita}_{st-1} + \\ & \text{electoral vote per capita}_{st} + \text{voted for sitting} \\ & \text{president}_{st} + \text{President-Governor alignment}_{st} + \\ & \text{Senate majority alignment}_{st} + \text{House majority} \\ & \text{alignment}_{st} + \text{President-State Congress} \\ & \text{alignment}_{st} \end{aligned}$$

**H2: Pure party affiliation on federal and state levels is an important determinant for certain federal spending categories.**

The hypothesis is tested using the model:

*Expenditure category<sub>st</sub> = population<sub>st</sub> + per capita tax burden<sub>st</sub> + gross state product per capita<sub>st</sub> + gross state product per capita<sub>st-1</sub> + electoral vote per capita<sub>st</sub> + voted for Republican President in office<sub>st</sub> + voted for Democrat President in office<sub>st</sub> + Republican Governor<sub>st</sub> + Democrat Governor<sub>st</sub> + both Senators Republican<sub>st</sub> + both Senators Democrats<sub>st</sub> + majority of Representatives Republican<sub>st</sub> + majority of Representatives Democrat<sub>st</sub> + State Senate majority Republican<sub>st</sub> + State Senate majority Democrat<sub>st</sub> + State House majority Republican<sub>st</sub> + State House majority Democrat<sub>st</sub>*

**H3: The net fiscal benefit per capita can be allocated according to a majority alignment model or political party alignment model.**

The hypothesis is tested using the following model:

*Net fiscal benefit<sub>st</sub> = electoral vote per capita<sub>st</sub> + gross state product per capita<sub>st</sub> + gross state product per capita<sub>st-1</sub> + gross state product per capita<sub>st-2</sub> + gross state product per capita<sub>st-3</sub> + gross state product per capita<sub>st-4</sub> + gross state product per capita<sub>st-5</sub> + gross state product per capita<sub>st-6</sub> + voted for sitting president<sub>st</sub> + President-Governor alignment<sub>st</sub> + Senate majority alignment<sub>st</sub> + House majority alignment<sub>st</sub> + President-State Congress alignment<sub>st</sub>*

**Section II**

**Data Selection:**

The database used for the study draws from several sources, and is both political and economic in nature. Political data includes real changes observed every two years, with some categories exhibiting more variation than others. The presidential vote data includes the Electoral College vote

apportionment and allocation by party, while the federal legislative branch includes apportionment data as it affects the House of Representatives. Changes in apportionment are made following the decennial census, and thus are applied for elections in 1982, 1992, and 2002, resulting in electoral office change early in the following year (1983, 1993, and 2003). These changes reflect real population and demographic shifts among the states, which shifts the allocation of four hundred and thirty-five representatives amongst the fifty states and disperses five hundred and thirty-eight electoral votes among the states and the District of Columbia. Each member of the House of Representatives serves a two year term and may be re-elected an unlimited number of times. Senators serve for staggered six-year terms so that elections are held for approximately one-third of the seats every other year; there are no term limits. On the state level, term limits, length of term and internal apportionment varies widely for the state level congress, as does the quantity of senators and representatives within each state. To facilitate comparison, the state-level congresses are assigned binary variables that represent the majority party within the State Senate and the State House of Representatives. This data was obtained from the United States Congressional Almanac and the Book of the States.

The economic data includes federal transfers to the states, organized by major spending category. This paper makes use of the Consolidated Federal Funds Report (CFFR), annually published by the U.S. Department of the Census. This document aggregates the federal government expenditures or obligations in state, county, and sub-county areas of the United States (including the District of Columbia and U.S. Outlying Areas). The CFFR contains statistics on the geographic distribution of federal program expenditures and obligations, using data submitted by federal departments and agencies. The CFFR expenditure data is “much more comprehensive than the much more commonly used Bickers-Stein Federal Awards Assistance Data (Shor 2005),” which

**Table 2: Summary Definitions of Dependent Variables**

<b>Variable</b>	<b>Definition</b>	<b>Source</b>
Total Expenditures	all government spending and obligations, excluding contingent liabilities (total dollars)	Consolidated Federal Funds Report (CFFR)
Defense Expenditures	expenditures for all Department of Defense agencies (total dollars)	CFFR
Grants Awarded	all project-specific grants, all formula grants prescribed by law (total dollars)	CFFR
Total Procurement	Value of obligations for contract actions accorded to the place of performance (total dollars)	CFFR
Defense Procurement	Value of obligations for defense-related contract actions accorded to the place of performance (total dollars)	CFFR
Other Procurement	Value of obligations for nondefense-related contract actions accorded to the place of performance (total dollars)	CFFR
Retirement and Disability	all Social Security payments and federal employee retirement and disability benefits (total dollars)	CFFR
Other Payments	Other direct payments to individuals other than retirement and disability, direct payments not for individuals (total dollars)	CFFR
Net Fiscal Benefit	amount of public services received minus the amount of taxes paid (total dollars)	CFFR, Tax foundation, Book of the States

was used in Atlas et al and Levitt and Snyder, 1995 and 1997. The population data is data from the official U.S. Census (for 1990 and 2000) and estimates for all other years. The state federal tax burden data is collected from the Tax Foundation and the U.S. Bureau of Economic Analysis. Gross state product (GSP), a measure of each state’s economic output in current dollars, is obtained from the Bureau of Economic Analysis.

Twenty-two years of data, from 1983 to 2004, is organized in yearly panels for forty-six states, excluding the District of Columbia, Hawaii and Alaska—following a well established precedent in the literature. The states of Virginia and Maryland were also excluded from analysis. As the federal expenditure data is allocated by place of performance, including Virginia and Maryland could obscure political determinants in the allocation of federal funds.

**Summary of Variables Used in Analysis:**

*Dependent Variables:* The definition and source of the dependent variables for all hypotheses are summarized in **Table 2**.

Alternatively, total expenditures can be defined as:

$$\text{Total expenditures} = \text{defense expenditures} + \text{grants awarded} + \text{other procurement} + \text{retirement and disability} + \text{other payments}$$

Defense expenditures include defense procurement; while total procurement is composed of defense and non-defense related federal procurement dollars.

The statistical properties of the dependent variables, in total actual dollar terms per capita, are summarized in **Table 3**.

*Independent Variables:* The independent variables are defined in the **Table 4**. A summary of the statistical properties of each independent variable follows in **Table 5**.

**Figures 1 to 4** show the frequency and distribution of four key dependent variables in per capita terms: total expenditures, defense expenditures, grants awarded and the net fiscal benefit.



**Table 3: Statistical Summary of Dependent Variables**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Min</b>	<b>Max</b>
Total Expenditures	1012	4690.7	1448.3	2056.4	10457.1
Defense Expenditures	1012	734.8	380.4	114.8	2783.7
Grants Awarded	1012	881.4	437.2	244.3	3241.8
Total Procurement	1012	636.5	437.4	97.8	3137.1
Defense Procurement	1012	390.8	315.5	37.6	2560.8
Other Procurement	1012	245.7	308.2	19.1	2596.1
Retirement and Disability	1012	1585.0	482.0	578.9	3216.5
Other Payments	966	894.6	492.1	185.8	4166.8
Net Fiscal Benefit	1012	192.7	1382.3	-5756.6	5618.0

**Table 4: Summary Definitions of Independent Variables**

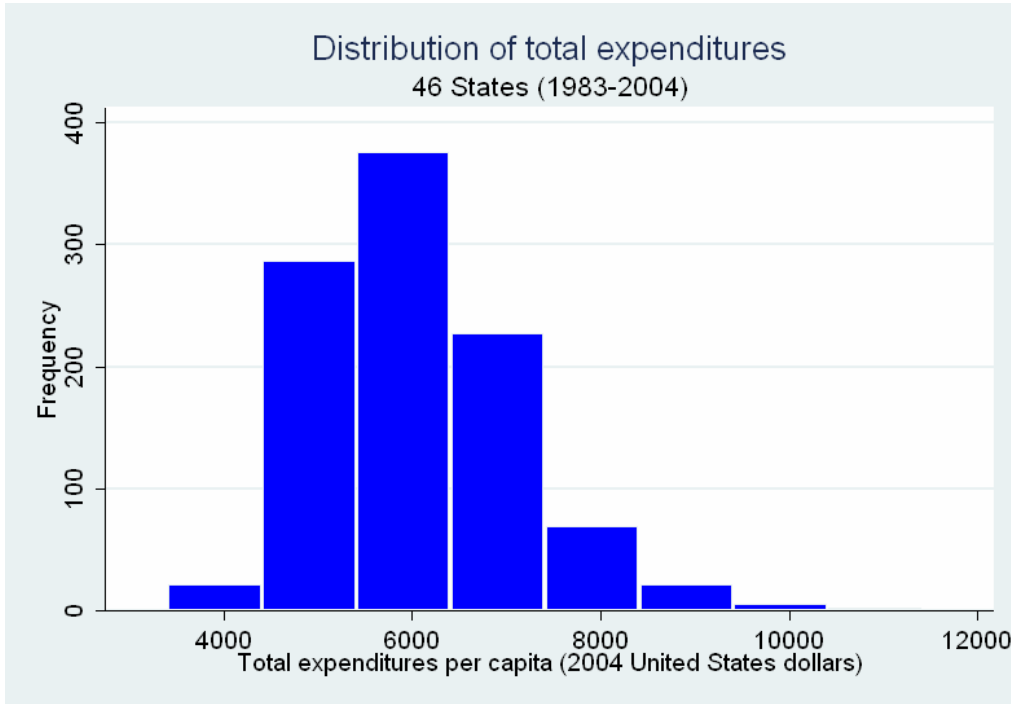
<b>Variable</b>	<b>Definition</b>	<b>Source</b>
Population	United States resident population	United States Bureau of the Census
Population2	Square of population	United States Bureau of the Census
Tax burden per capita	Average federal taxes paid, per capita, expressed in current dollars; includes accounting for the federal deficit as well as all federal taxes including social insurance, excise, income and corporate	Tax Foundation
Income per capita	Average income, per capita of a state's residents	United States Bureau of Economic Analysis
Electoral vote per capita	Electoral votes of a state divided by population, the votes are equal to a state's total number of representatives in congress (House plus Senate)	The Book of the States, United States Bureau of the Census
Senators per capita	Number of senators (2) divided by population	United States Bureau of the Census
GSP per capita	Gross state product, expressed in per capita terms	United States Bureau of Economic Analysis
Voted for sitting president	Binary variable that takes value of 1 if state voted for sitting president	The Book of the States
President-governor alignment	Binary variable that takes value of 1 if president and governor are of the same political party	The Book of the States
Senate majority alignment	Binary variable that takes value of 1 if both senators from a state are aligned with the majority party	The Book of the States

House majority alignment	Binary variable that takes value of 1 if 50%+1 representatives from a state are aligned with the majority party	The Book of the States
President-State Congress majority alignment	Binary variable that takes value of 1 if president and the majority party of a State's Congress are of the same political party	The Book of the States
Voted for Republican sitting president	Binary variable that takes value of 1 if state voted for a Republican sitting president	The Book of the States
Voted for Democrat sitting president	Binary variable that takes value of 1 if state voted for a Democrat sitting president	The Book of the States
Republican governor	Binary variable that takes value of 1 if state's governor is Republican	The Book of the States
Democrat governor	Binary variable that takes value of 1 if state's governor is Democrat	The Book of the States
Senators both Republican	Binary variable that takes value of 1 if both senators from a state are Republican	The Book of the States
Senators both Democrat	Binary variable that takes value of 1 if both senators from a state are Democrat	The Book of the States
Representatives majority Republican	Binary variable that takes value of 1 if most representatives from a state are Republican	The Book of the States
Representatives majority Democrat	Binary variable that takes value of 1 if most representatives from a state are Democrat	The Book of the States
State Senate majority Republican	Binary variable that takes value of 1 if State Senate is majority Republican	The Book of the States
State Senate majority Democrat	Binary variable that takes value of 1 if State Senate is majority Democrat	The Book of the States
State House majority Republican	Binary variable that takes value of 1 if State House is majority Republican	The Book of the States
State House majority Democrat	Binary variable that takes value of 1 if State House is majority Democrat	The Book of the States
Coastal	Binary variable that takes value of 1 if State is on coastline (Gulf of Mexico, Pacific Ocean, Atlantic Ocean)	Map of the United States
Swing State	Binary variable that takes value of 1 if State voted within 5% of the winning margin in last presidential election	Atlas of U.S. Presidential Elections

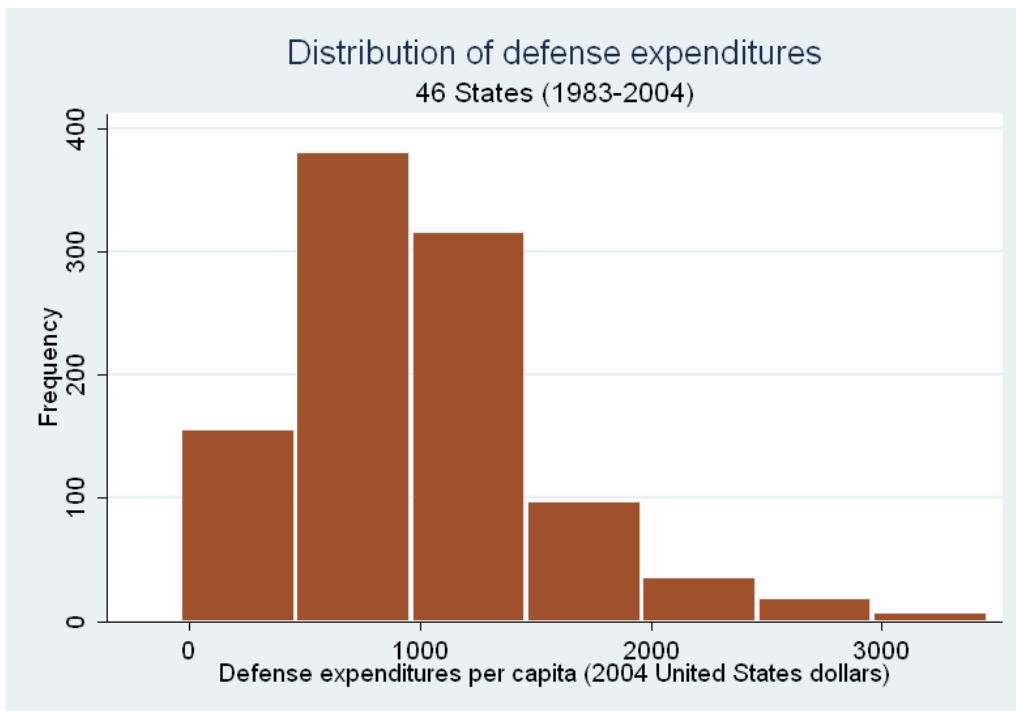
**Table 5: Statistical Summary of Independent Variables**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Tax Burden per capita (\$US)	1012	4497.961	1629.382	1578.888	11512.43
Income per capita (\$US)	1012	21280.19	6736.325	8576	45412
GSP per capita (\$US)	1012	25408.74	8325.259	10114.91	63004.4
Voted for sitting president	1012	0.7371542	0.440397	0	1
President-governor alignment	1012	0.3320158	0.4711695	0	1
Senate majority alignment	1012	0.3300395	0.4704595	0	1
House majority alignment	1012	0.5592885	0.4967179	0	1
President-State Congress majority alignment	1012	0.2183794	0.4133506	0	1
Population density (pop per square mile)	1012	143.5828	189.9263	4.635149	995.7769
Electoral vote per capita	1012	2.69E-06	1.05E-06	1.39E-06	6.62E-06
Senators per capita	1012	9.75E-07	9.89E-07	5.58E-08	4.41E-06
Population	1012	5325959	5776611	453401	3.58E+07
Population squared	1012	6.17E+13	1.55E+14	2.06E+11	1.28E+15
Voted for Republican sitting president	1012	0.5335968	0.4991166	0	1
Voted for Democrat sitting president	1012	0.2035573	0.4028425	0	1
Republican governor	1012	0.5158103	0.4999971	0	1
Democrat governor	1012	0.4703557	0.4993672	0	1
Senators both Republican	1012	0.2885375	0.4533064	0	1
Senators both Democrat	1012	0.2924901	0.4551311	0	1
Representatives majority Republican	1012	0.3695652	0.4829257	0	1
Representatives majority Democrat	1012	0.4841897	0.4999971	0	1
State Senate majority Republican	1012	0.4011858	0.4903808	0	1
State Senate majority Democrat	1012	0.5533597	0.4973904	0	1
State House majority Republican	1012	0.3695652	0.4829257	0	1
State House majority Democrat	1012	0.5948617	0.4911615	0	1
Swing State	1012	0.1976285	0.3984072	0	1
Coastal state	1012	0.3685771	0.4826574	0	1

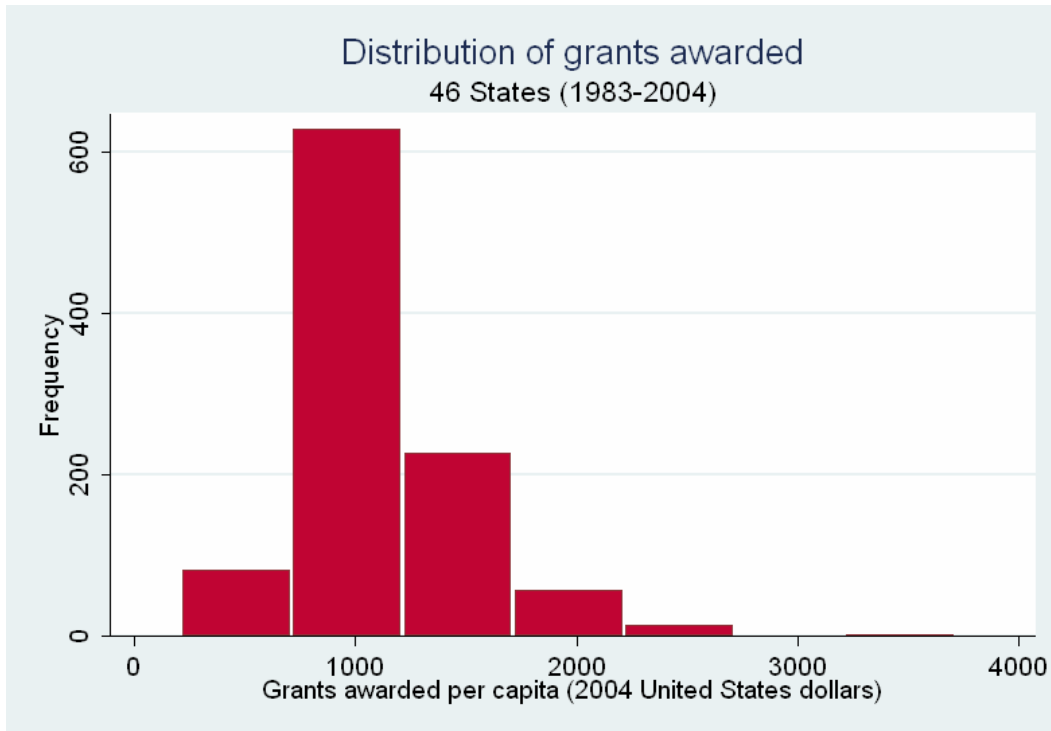
**Figure 1: Distribution of Total Expenditures in 46 American States: 1983-2004**



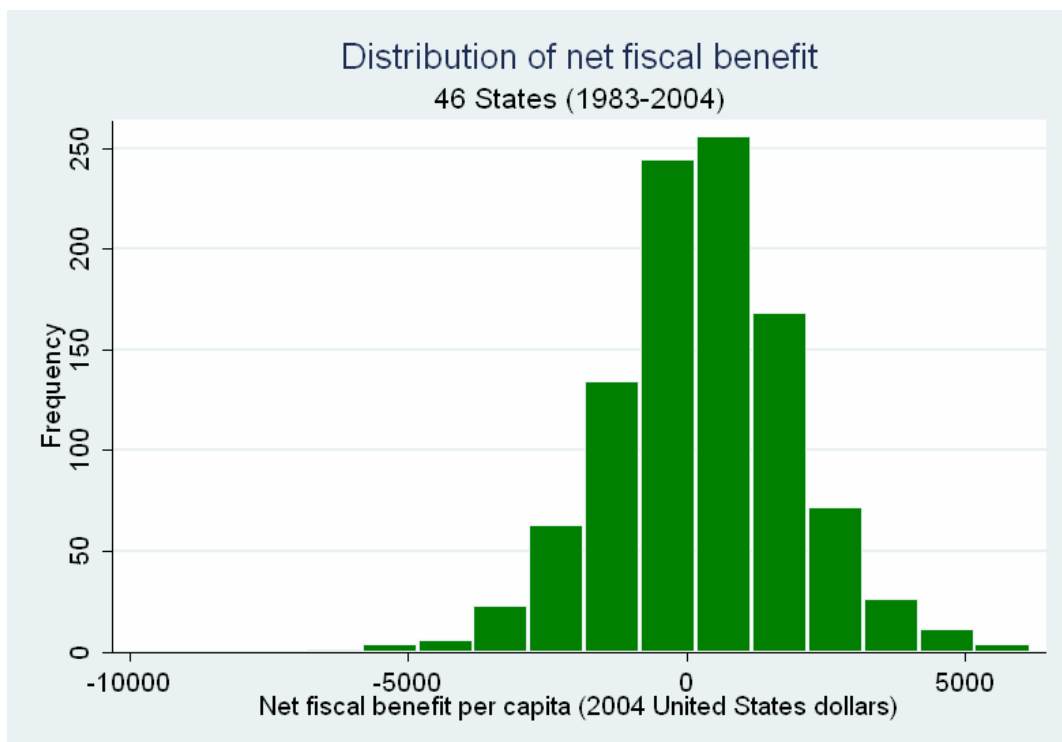
**Figure 2 : Distribution of Defense Expenditures in 46 American States : 1983-2004**



**Figure 3: Distribution of Grants Awarded in 46 American States: 1983-2004**



**Figure 4: Distribution of Net Fiscal Benefit in 46 American States: 1983-2004**



**Section III: Empirical Results:**

**Hypothesis 1: Political alignment by various combinations of actors on the federal level and between the federal and state level is important (alignment with majority party) for certain federal spending categories**

In this section, we will model the dependent variable in per-capita terms. The preference in the relevant literature for a dependent variable in this form is clear (Atlas et al, 1995; Levitt and Snyder, 1997; Larcinese et al, 2006). We will adopt a logarithmic transformation for the high-variation categories of procurement and defense-related spending, following Shor (2005).

on total federal expenditures per capita yields the results show in **Model 1.1:**

Some important results are summarized below:

- A dollar increase in per capita tax burden decreases the per-capita amount received by the state by 50 cents;
- An increase by a dollar in per capita income increases the per-capita amount received by the state by 32 cents;
- A state that elected the president into office receives less than a state that voted against the sitting president, for any part of a 4-8 year term;
- Alignment variables are not important

**Model 1.1: Total Expenditures (per capita), 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	Z	P> z
Tax burden per capita	-0.5424816	4.67E-02	-11.6	0
Income per capita	0.325597	1.91E-02	17.09	0
GSP per capita	0.0030378	1.29E-02	0.23	0.814
Voted for sitting president	-113.0688	3.96E+01	-2.86	0.004
President-governor alignment	52.74592	35.7826	1.47	0.14
Senate majority alignment	0.198546	33.29325	0.01	0.995
House majority alignment	41.3899	33.00071	1.25	0.21
President-State Congress majority alignment	204.8054	44.3402	4.62	0
Population density	-3.469659	0.5129692	-6.76	0
Electoral vote per capita	2.60E+08	1.43E+08	1.82	0.068
Senators per capita	2.06E+08	1.76E+08	1.17	0.242
Coastal state	640.3563	168.8857	3.79	0
Constant	-514.8069	340.012	-1.51	0.13

Observations = 1012; Groups = 46; Observations per group = 22  
 R<sup>2</sup> (within) = 0.8953    R<sup>2</sup> (between) = 0.0049    R<sup>2</sup> (overall) = 0.6047

*Total expenditures:*

This category includes the aggregate of all government spending and obligations, excluding the contingent liabilities of loan insurance and direct loans. A random-effects GLS regression<sup>3</sup> with robust standard errors

in the aggregate totals, however, party alignment between the President and the majority party of a State’s legislature yields a \$204 per capita increase in total federal expenditures;

- A coastal state receives approximately \$640 more per capita than a non-coastal state.

<sup>3</sup> The random-effects model (for this model and all subsequent models) was chosen using a Hausman test for random-effects specification, testing the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. The results were insignificant, with Prob>chi2 greater than

Results for the political variables in the majority alignment model reveals that voting

.05, and thus justified the use of a random-effects model.

for the sitting President does not have a favorable impact on the state's total federal expenditure dollars. Alignment with the house majority is not significant, and would seem to contradict Levitt and Snyder's (1997) results, as well as their predecessors in the literature. The effect of House majority alignment is perhaps understated in this model. Given that a populous state such as Ohio (17 representatives) or California (53 representatives)<sup>4</sup> sends many members, whereas less populous states such as Wyoming have but one representative, the effects of a powerful member of the House are primarily felt within a district, which can be part of a state or the entire state. As the Levitt and Snyder paper indicates, this can be corrected by examining district-by-district expenditures, using as instrumental variable the out-of-district but in-state total expenditures received, but a valid data set is only available for 1983-1990. Furthermore, due to decennial reapportionment, it is not possible to conduct district-corrected studies for more than ten years. For purposes of this paper, it is difficult to control for the precise geographic impact a member of the house would have on his or her district, as the period studied extends far beyond 1983-1990, the period for which such an instrumental variable method is available. To correct for this, Atlas et al (1995) and Larcinese et al (2005) include the variables senators per capita and electoral vote per capita to correct for the overrepresentation bias. We have included these variables in the regressions. Indeed, this paper is more concerned with global impacts of alignment with the majority or with political party rather than specific determinants for individually powerful members of the federal legislative branch. A previously unstudied variable, party alignment between the President and the controlling party of a state's congress is significant at the 0% level. Coastal states receive more than non-coastal states; this is primarily due to the larger amounts of spending that are allocated towards coastal defense and are aggregated in the total per-capita expenditure amounts.

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<sup>4</sup> Following the 2000 Census re-apportionment, current as of the 2004 elections

#### *Defense Expenditures:*

Defense expenditures are computed by totaling the expenditures for all Department of Defense agencies. **Model 2.1** takes the natural logarithm<sup>5</sup> of per-capita defense expenditures as the dependent variable:

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<sup>5</sup> Following precedent in Shor (2005), wide disparities amongst states in this spending total can be smoothed out by taking the natural logarithm. All procurement categories will also be expressed in logarithmic form

**Model 2.1: Defense Expenditures (logarithm of per capita amounts)  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	Z	P> z
Tax burden per capita	-1.94E-04	0.0000151	-12.9	0
Income per capita	4.03E-05	7.01E-06	5.75	0
GSP per capita	0.0000106	4.67E-06	2.28	0.023
Voted for sitting president	-0.0500139	0.0161867	-3.09	0.002
President-governor alignment	0.0641802	0.0143281	4.48	0
Senate majority alignment	0.0102201	0.0141644	0.72	0.471
House majority alignment	0.052483	0.0133454	3.93	0
President-State Congress majority alignment	0.0331966	0.0174987	1.9	0.058
Population density	-0.0012576	0.0003195	-3.94	0
Electoral vote per capita	154548.8	61569.06	2.51	0.012
Senators per capita	-52153.33	87959.37	-0.59	0.553
Coastal state	0.4645287	0.20761	2.24	0.025
Constant	5.823025	0.1578088	36.9	0

Observations = 1012; Groups = 46; Observations per group = 22  
R<sup>2</sup> (within) = 0.2481 R<sup>2</sup> (between) = 0.0162 R<sup>2</sup> (overall) = 0.0311

Some important results are summarized below:

- An increase of \$100 in per capita tax burden decreases per-capita defense expenditures by 2%;
- An increase of \$1000 in per capita income increases per-capita defense expenditures by 4%;
- An increase of \$1000 in GSP per capita increases per-capita defense expenditures by 1%;
- Voting for the sitting president decreases federal defense dollars per capita by 5%;
- Party alignment between the president and the governor increases federal defense spending in the state by 6.4%, while party alignment between the president and the state legislative branch increases defense spending by 3.3%;
- A majority of representatives aligned with the controlling party of the House increases per capita defense spending by 5.2%;
- Less densely populated states receive more than higher-density states;
- Coastal states receive 50% more in defense spending than non-coastal states.

Less-wealthy states receive a significantly larger share of the defense spending pie, which could be indicative of the fact that more defense employees also live in those states.

Politically, a vote for a sitting president is not significant, while alignment between the governor and the president is very significant. This alignment variable was first studied in the recent Larcinese et al (2006) paper<sup>6</sup>. Amongst other political variables, alignment with the House majority and President- State congress alignment are significant at the 1% and 5% levels, respectively.

*Grants Awarded:*

The grants awarded category includes two different types of grants, formula grants and project grants. Formula grants are “allocations of money to States or their subdivisions in accordance with a distribution formula prescribed by law or administrative regulation, for activities of a continuing nature not confined to a specific program;”<sup>7</sup> while project grants are defined as “the funding, for fixed or known periods, of specific projects or the delivery of specific services or products without liability for damages for failure to perform. Project grants include fellowships, scholarships, research grants, training grants,

<sup>6</sup> Only in respect to per-capita total federal expenditures

<sup>7</sup> Catalog of Federal Domestic Assistance (CFDA)



traineeships, experimental and demonstration grants, evaluation grants, planning grants, technical assistance grants, survey grants, construction grants, and unsolicited contractual agreements.” This category includes both intergovernmental grants and grants to individuals.

The regression on grants awarded per capita yields **Model 3.1**.

again a transfer from the richer-income states to the lower-income states. For every dollar increase in per-capita tax burden, each model predicts a loss to the state of either \$3,800 or \$3,200, respectively, in federal grants dollars. There is little evidence of a presidential “reward” to the states that placed him in office. The only political variable showing statistical significance is that of President-State Congress party alignment, whereas

**Model 3.1: Grants awarded (per capita), 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Tax burden per capita	-0.2217028	0.015477	-14.3	0
Income per capita	1.13E-01	0.0052689	21.37	0
GSP per capita	-4.30E-03	0.0034093	-1.26	0.207
Voted for sitting president	-21.34326	13.56105	-1.57	0.116
President-governor alignment	-2.091315	10.85167	-0.19	0.847
Senate majority alignment	-0.6338944	10.42645	-0.06	0.952
House majority alignment	-4.433571	11.77089	-0.38	0.706
President-State Congress majority alignment	58.19225	13.4862	4.31	0
Population density	-0.6174992	0.1386017	-4.46	0
Electoral vote per capita	6.10E+07	3.51E+07	1.74	0.082
Senators per capita	9.09E+07	4.20E+07	2.16	0.031
Coastal state	111.4297	40.25515	2.77	0.006
Constant	-606.4701	96.26826	-6.3	0

Observations = 1012; Groups = 46; Observations per group = 22  
 R<sup>2</sup> (within) = 0.8775    R<sup>2</sup> (between) = 0.2387    R<sup>2</sup> (overall) = 0.7105

Some important results are summarized below:

- A state receives 10 cents for every dollar of per capita income;
- A state receives 20 cents less per dollar of per capita tax burden;
- The political alignment variable of any significance is the alignment between the president and the state congress, which procures approximately \$60 more dollars in grants spending per person;
- Less densely populated states receive more per capita than urbanized states;
- Coastal states receive \$110 more per capita than landlocked states.

The tax burden per capita is negative and significant in both regressions, indicating once

geographic factors seem to factor heavily into grants spending. A potential explanation could be that components of grants, such as highway spending, are more required in states that cover a wider geographic expanse.

*Procurement Spending:*

Procurement data, divided into defense procurement and other agency procurement (other procurement) is represented by the value of obligations for contract actions and does not reflect actual government expenditures. Data is coded to the place of performance (state) rather than the location of the primary contractor. Excluded from this category are the amounts for the judicial and legislative branches of government as well as most intergovernmental transfers of funds. Foreign procurement spending (that is, spending in a foreign country as place of

performance) is excluded. Capital expenditures as well as building leases, utilities payment and other services are included. The first model in this category (**Model 4.1**) takes the natural logarithm of total procurement per capita as the dependent variable.

the variables of importance are alignment variables – between the President and a state’s governor, and alignment with the House majority. The literature shows an extensive focus on the role of the House of Representatives in discretionary spending, yet the results here indicate that these other

**Model 4.1: Total procurement (log of per capita amounts), 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Tax burden per capita	-0.0002226	0.0000195	-11.4	0
Income per capita	7.45E-05	0.0000101	7.4	0
GSP per capita	-5.12E-06	7.00E-06	-0.73	0.464
Voted for sitting president	-0.0227638	0.0208042	-1.09	0.274
President-governor alignment	0.0345897	0.0205444	1.68	0.092
Senate majority alignment	0.0059279	0.0192638	0.31	0.758
House majority alignment	0.0602979	0.0175405	3.44	0.001
President-State Congress majority alignment	0.0334276	0.0237567	1.41	0.159
Population density	-0.0011295	0.0003261	-3.46	0.001
Electoral vote per capita	165869.3	87202.97	1.9	0.057
Senators per capita	28600.22	117926.7	0.24	0.808
Coastal state	0.3865817	0.1829957	2.11	0.035
Constant	5.31957	0.2089126	25.46	0

Observations = 1012; Groups = 46; Observations per group = 22  
R<sup>2</sup> (within) = 0.2513 R<sup>2</sup> (between) = 0.0290 R<sup>2</sup> (overall) = 0.0009

Some important results are summarized below:

- An increase in the per capita tax burden of \$100 decreases procurement spending by 2%;
- An increase of \$1000 in per capita income increases procurement spending by 7.5%;
- Alignment between the president and governor’s political party increases total procurement spending by 3.5%;
- Alignment with the party controlling the House of Representatives increases procurement spending by 6%;
- States with a higher population density receive less, while coastal states receive more.

studies may “have failed to incorporate data from other sources of influence at different levels of analysis...” and that “...predictors at different levels of analysis affect our conclusions regarding partisan effects on distributive politics.” (Shor 2005)

*Defense Procurement:*

Disaggregating total procurement spending into two subgroups, we first examine federal defense procurement expenditures. **Model 5.1** takes the natural logarithm of defense procurement per capita as dependent variable.

The total procurement spending category exhibits the same relationship with income per capita and tax burden per capita as has many other spending categories. In model 4.1,

**Model 5.1: Defense procurement (log of per capita amounts)  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	Z	P> z
Tax burden per capita	-0.0002741	0.0000232	-11.8	0
Income per capita	0.0000734	0.0000128	5.75	0
GSP per capita	-5.63E-06	8.73E-06	-0.65	0.519
Voted for sitting president	-0.0534968	0.0250464	-2.14	0.033
President-governor alignment	0.0869665	0.0246185	3.53	0
Senate majority alignment	0.0485212	0.0230064	2.11	0.035
House majority alignment	0.0949392	0.0219298	4.33	0
President-State Congress majority alignment	0.0404447	0.0298959	1.35	0.176
Population density	-0.0004652	0.0004073	-1.14	0.253
Electoral vote per capita	244266.3	107884.9	2.26	0.024
Senators per capita	-219754.4	145129.4	-1.51	0.13
Coastal state	0.4705112	0.2383926	1.97	0.048
Constant	4.885822	0.2521169	19.38	0

Observations = 1012; Groups = 46; Observations per group = 22  
R<sup>2</sup> (within) = 0.1766 R<sup>2</sup> (between) = 0.0141 R<sup>2</sup> (overall) = 0.0371

Results include:

- An increase in tax burden per capita of \$100 would decrease defense procurement spending by 2.7%;
- An increase in income per capita of \$1000 would increase defense procurement by 7.3%;
- A vote for the sitting president decreases the amount received by 5.3%;
- Alignment between the president and a state’s governor increases the amount received by a state by 8.7%;
- Alignment with the Senate majority and the House majority shows an increase in federal defense procurement spending of 4.9% and 9.5%, respectively;
- A coastal state receives 47% more defense procurement dollars than a non-coastal state.

The same effects shown in the total procurement spending model hold in this model, with political alignment and the impact of the president showing statistical significance all at the 5% level or 1% level.

*Other Procurement:*

Differencing the defense procurement from total procurement yields the category of other

procurement spending. The first model, **Model 6.1**, uses the natural logarithm of other procurement spending per capita as the dependent variable, producing the following results:

Some important results are summarized below:

- An increase of \$100 in the tax burden per capita yields a 1% decrease in other procurement spending per capita;
- An increase of \$1000 in the income per capita yields a 6% increase in other procurement spending;
- Political alignment variables are not at all significant, other than alignment with the House of Representatives majority, which shows a 3% decrease in other procurement spending per capita;
- The variable Senators per capita, which shows the effect by “overrepresented” states, indicates that they are favored in other procurement spending.

Once again, the same tendencies hold for the income per capita and the tax burden per capita. The majority alignment model yields but one statistically significant and negative impact on the non-defense procurement dollars received, which is alignment with the House majority.

**Model 6.1: Other procurement (log of per capita amounts)  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Tax burden per capita	-0.0000971	0.0000227	-4.28	0
Income per capita	0.000063	0.0000117	5.37	0
GSP per capita	9.36E-06	9.18E-06	1.02	0.308
Voted for sitting president	0.0187768	0.0237915	0.79	0.43
President-governor alignment	-0.0218048	0.0246648	-0.88	0.377
Senate majority alignment	-0.0203954	0.0207546	-0.98	0.326
House majority alignment	-0.0365785	0.0196383	-1.86	0.063
President-State Congress majority alignment	-0.0085568	0.0258438	-0.33	0.741
Population density	-0.0024128	0.0004221	-5.72	0
Electoral vote per capita	-18301.22	72473.49	-0.25	0.801
Senators per capita	422485.2	137989.9	3.06	0.002
Coastal state	0.4286302	0.1600995	2.68	0.007
Constant	3.831463	0.2226073	17.21	0

Observations = 1012; Groups = 46; Observations per group = 22  
 $R^2$  (within) = 0.5234  $R^2$  (between) = 0.0030  $R^2$  (overall) = 0.0449

*Retirement and Disability Payments:*

Retirement and disability data includes federal employee retirement and disability benefits (including military and diplomatic personnel) and all Social Security payments. **Model 7.1** takes per capita retirement and disability payments as dependent variable.

Some important results are summarized below:

- A dollar increase in the tax burden per capita yields a decrease of 17 cents per capita in retirement and disability spending, while a dollar increase in income per capita increases the amount

**Model 7.1: Retirement and Disability (per capita),  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Tax burden per capita	-0.1701692	0.0219628	-7.75	0
Income per capita	1.12E-01	0.0090074	12.49	0
GSP per capita	-8.11E-03	0.0056385	-1.44	0.15
Voted for sitting president	-13.3325	24.31769	-0.55	0.584
President-governor alignment	11.60098	18.4597	0.63	0.53
Senate majority alignment	-7.774685	17.20426	-0.45	0.651
House majority alignment	5.808874	18.05438	0.32	0.748
President-State Congress majority alignment	15.91784	24.85702	0.64	0.522
Population density	-0.7141251	0.1329107	-5.37	0
Electoral vote per capita	1.07E+08	4.68E+07	2.28	0.023
Senators per capita	-6.62E+07	5.09E+07	-1.3	0.193
Coastal state	83.37106	53.51849	1.56	0.119
Constant	14.66442	117.6832	0.12	0.901

Observations = 1012; Groups = 46; Observations per group = 22  
 $R^2$  (within) = 0.7482  $R^2$  (between) = 0.1061  $R^2$  (overall) = 0.5546

**Model 8.1: Other Payments, 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Tax burden per capita	-0.1162946	0.0192389	-6.04	0
Income per capita	1.02E-01	0.0067278	15.09	0
GSP per capita	-9.31E-03	0.0044321	-2.1	0.036
Voted for sitting president	-44.17144	17.78916	-2.48	0.013
President-governor alignment	11.0443	16.9816	0.65	0.515
Senate majority alignment	-9.73557	17.85796	-0.55	0.586
House majority alignment	-11.67391	15.92125	-0.73	0.463
President-State Congress majority alignment	80.61363	20.56637	3.92	0
Population density	-0.4287709	0.1244383	-3.45	0.001
Electoral vote per capita	-2.45E+07	4.69E+07	-0.52	0.602
Senators per capita	8.55E+07	5.87E+07	1.46	0.145
Coastal state	37.5652	38.30657	0.98	0.327
Constant	-448.9418	122.6501	-3.66	0

Observations = 966; Groups = 46; Observations per group = 21  
 $R^2$  (within) = 0.8169     $R^2$  (between) = 0.0001     $R^2$  (overall) = 0.6445

- received by 11 cents;
- There is no significant political effect observed on the allocation of retirement and disability spending to the states;
- States with a higher population density receive less than states with a lower population density.

non-salary postal service expenditures, federal contributions to employee life and health insurance programs, along with other smaller programs of a similar nature. **Model 8.1** uses other payments in per-capita terms as dependent variable:

Some important results are summarized below:

- A dollar increase in income per capita increases other payments by 10 cents, while a dollar increase in per capita tax burden decreases other payments by 12 cents;
- A vote for the sitting president reduces the per-capita other payments to states by \$44 dollars;
- Alignment between the sitting president and the controlling party of the state’s Congress increases other payments to the state by \$81 dollars per capita;
- More densely populated states receive less than sparsely populated states.

It is logical that retirement and disability payments to the states do not seem to be politically influenced, as both these payments are largely formula based. A state with a greater population density could conceivably provide the same level of service in a state with lower population density by taking advantage of the economies of scale offered by a more urbanized population.

*Other Payments:*

The spending category “Other Payments” includes other direct payments to individuals other than retirement and disability and direct payments that are not for individuals. The former category includes excess earned income tax credit payments, payments to state unemployment trust funds, and interest subsidies for family education loans. The latter category includes the administration costs of the federal family education loan program, crop insurance indemnity payments and crop subsidies, all non-procurement and

Although other payments to states can include more pork-barrel type spending items, a look at the majority alignment model shows the determinants to be largely geographic and economic. The variable showing party alignment between the controlling party of a

**Model 1.2: Total expenditures (total dollars),  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Population	2990.007	490.2887	6.1	0
Population <sup>2</sup>	0.0000811	0.0000157	5.16	0
Tax burden per capita	-2492114	647042.1	-3.85	0
Income per capita	1577879	201559.4	7.83	0
Electoral vote per capita	3.44E+15	1.16E+15	2.97	0.003
Senators per capita	-3.10E+15	1.52E+15	-2.04	0.041
GSP per capita	-78557.1	160120.7	-0.49	0.624
Population density	-1393213	2740475	-0.51	0.611
Voted for Republican sitting president	-7.84E+08	5.05E+08	-1.55	0.121
Voted for Democrat sitting president	7.68E+07	4.91E+08	0.16	0.876
Republican governor	3.24E+09	5.86E+08	5.54	0
Democrat governor	2.76E+09	6.26E+08	4.41	0
Senators both Republican	1.57E+09	4.66E+08	3.38	0.001
Senators both Democrat	3.82E+08	6.64E+08	0.58	0.565
Representatives majority Republican	-3.02E+08	5.69E+08	-0.53	0.595
Representatives majority Democrat	-2.70E+09	5.52E+08	-4.88	0
State Senate majority Republican	-3.95E+08	8.21E+08	-0.48	0.631
State Senate majority Democrat	-1.21E+09	8.06E+08	-1.5	0.135
State House majority Republican	1.52E+09	7.71E+08	1.98	0.048
State House majority Democrat	-6.46E+07	7.51E+08	-0.09	0.931
Swing State	2667540	5.75E+08	0	0.996
Coastal	9.75E+08	1.12E+09	0.87	0.383
Constant	-2.43E+10	3.56E+09	-6.83	0

Observations = 1012; Groups = 46; Observations per group = 22  
R<sup>2</sup> (within) = 0.8136 R<sup>2</sup> (between) = 0.9641 R<sup>2</sup> (overall) = 0.9363

state’s Congress and the president, which is new to the literature, is significant at the 1% level.

**Hypothesis 2: Pure party affiliation on federal and state levels is an important determinant for certain federal spending categories**

In this section, we will model the dependent variables in total dollar terms. The choice is rather arbitrary, as the literature shows transfers in a partisan model modeled as percentage of total budget (Budge and Hofferbert, 1990) or in total dollar terms (Levitt and Snyder, 1995). We have chosen the latter method, with a logarithmic transformation in procurement and defense-related categories.

*Total expenditures:*

This is the aggregate of all government spending and obligations. We again use a random-effects<sup>8</sup> GLS model with robust standard errors, taking total expenditures in dollar amounts as dependent variable (**Model 1.2**).

Some important results are summarized below:

- A dollar increase in per capita tax burden decreases a state’s total federal expenditures by \$2.4 million;
- An dollar increase in per capita income increases the amount received by the state by \$1.5 million;

<sup>8</sup> The random-effects model (for this model and all subsequent models) was chosen using a Hausman test for random-effects specification, as we did for the previous subsection.

**Model 2.2: Defense Expenditures (logarithm of total dollars)  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	Z	P> z
Population	1.29E-07	1.58E-08	8.19	0
Population <sup>2</sup>	-2.51E-15	3.33E-16	-7.54	0
Tax burden per capita	-0.00015	0.0000189	-7.94	0
Income per capita	0.0000434	8.06E-06	5.39	0
Electoral vote per capita	165038.9	65697.8	2.51	0.012
Senators per capita	-660543.2	99880.54	-6.61	0
GSP per capita	2.80E-06	5.12E-06	0.55	0.584
Population density	-0.0011689	0.0003106	-3.76	0
Voted for Republican sitting president	0.0289684	0.0165605	1.75	0.08
Voted for Democrat sitting president	-0.0780872	0.0195658	-3.99	0
Republican governor	0.1136302	0.0510719	2.22	0.026
Senators both Republican	0.1310102	0.0517908	2.53	0.011
Democrat governor	0.0520171	0.0205373	2.53	0.011
Senators both Democrat	-0.0015471	0.0198169	-0.08	0.938
Representatives majority Republican	0.0503117	0.0250774	2.01	0.045
Representatives majority Democrat	0.0466752	0.0222688	2.1	0.036
State Senate majority Republican	0.1563138	0.0424886	3.68	0
State Senate majority Democrat	0.0737653	0.0421392	1.75	0.08
State House majority Republican	0.0199451	0.0539783	0.37	0.712
State House majority Democrat	-0.0127545	0.0512448	-0.25	0.803
Swing State	-0.033701	0.017217	-1.96	0.05
Coastal	0.5044113	0.2350721	2.15	0.032
Constant	20.52511	0.1935294	106	0

Observations = 1012; Groups = 46; Observations per group = 22  
R<sup>2</sup> (within) = 0.4395 R<sup>2</sup> (between) = 0.7825 R<sup>2</sup> (overall) = 0.7687

- A Republican governor receives \$480 million more than a Democrat counterpart;
- Representatives that are in majority Democrat bring \$2.7 billion less than a split or majority Republican House delegation;
- A State House of Representatives that is majority Republican indicates \$1.52 billion more in total federal expenditures.

Results concerning the allocation of total spending determined by pure party alignment model are not particularly noteworthy, beyond the economic, population and geographic effects similarly captured in the majority alignment model. Notably, having a State's two members of the Senate aligned with the Republican Party has a significant positive impact on the total funds received by the

State. A majority of Democrat Representatives yield a significant negative impact on the total federal funds received by the state. In the aggregate of federal expenditures, it is the federal legislative branch that seems to have the most impact.

*Defense Expenditures:*

Defense expenditures are computed by totaling the expenditures for all Department of Defense agencies. **Model 2.2** takes the natural logarithm<sup>9</sup> of total defense expenditures as the dependent variable:

Some important results are summarized below:

- An increase of \$100 in per capita tax burden decreases total defense expenditures by 1.5%;

<sup>9</sup> Following precedent in Shor (2005)

- An increase of \$1000 in per capita income increases defense expenditures by 4%;
- An increase of \$1000 in GSP per capita increases defense expenditures by 2.8%;
- Voting for the sitting Republican president decreases expenditures by 3%;
- Voting for the sitting Democrat president decreases expenditures by 7.8%;
- Party alignment between the president and the governor increases federal defense spending in the state by 6.4%, while party alignment between the president and the state legislative branch increases defense spending by 3.3%;
- Delegates to the House of Representatives aligned with the Republicans receive 0.5% more than representatives aligned with the Democrats;
- Less densely populated states receive more than higher-density states;
- Coastal states receive 50% more in defense spending than non-coastal states.

Similar results were obtained in this model (compared to the majority alignment model 2.1) with the results for the effects of common explanatory variables. This model, a party alignment model of defense expenditures, reveals that a vote for a Republican president has a very significant impact on defense-allocated expenditures to a state whereas a state that voted for a Democratic president would see a statistically significant drop. A very similar effect is observed with the party alignment of a state's two senators, with a positive impact for Republican alignment compared with senators split between the two parties or two Democratic senators. This result could reflect the spending priorities of the parties during this time period encompassing the end of the Cold War and the beginning of early 21<sup>st</sup> century neoconservative military interventions and an increase in security related spending. This will

be discussed in greater depth in the following section.

*Grants Awarded:*

The regression on total dollars of grants awarded yields **Model 3.2:**

Some important results are summarized below:

- A state receives \$440,000 more in grants with a dollar increase in per-capita income;
- A state collects \$890,000 less in grants per dollar of per capita tax burden;
- A Republican governor brings \$207 million more than a Democrat governor;
- Two Democrat senators bring \$70 million more than two Republican senators, and \$452 million more than a split senate delegation;
- More densely populated states receive more in total dollars than states with a lower population density;
- Coastal states receive \$656 million less in total dollars than landlocked states.

Population is not a significant variable in this category of spending. Although many grants are formula based, project-based block grants are also included in this category, which are largely determined by the infrastructure needs of a state, and to a certain extent, by pork barrel politics, and could thus mitigate the effects of a state's population. The tax burden per capita is significant, indicating once again a transfer from the richer-income states to the lower-income states, although the increase in income would mitigate the effect of the increased taxes<sup>10</sup>. This party alignment model shows that Senators aligned with either party have a positive impact on the grants awarded to their home state. On the other side of Capitol Hill, in the House of Representatives, the party alignment variables show a negative impact in grants allocated, indicating that a split delegation would receive more in grants allocated to the state.

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<sup>10</sup> Assume that a \$100 increase in per capita income increases the per capita tax burden by \$30. All other things equal, the net increase in total grants received would be  $(100 \times 440,000) - (30 \times 890,000) = \$18.3$  million.



**Model 3.2: Grants awarded (total dollars), 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Population	63.08007	203.9006	0.31	0.757
Population2	0.0000399	5.96E-06	6.69	0
Tax burden per capita	-893806	214832.3	-4.16	0
Income per capita	444688.1	64339.14	6.91	0
Electoral vote per capita	6.64E+14	3.35E+14	1.99	0.047
Senators per capita	-3.47E+14	5.33E+14	-0.65	0.514
GSP per capita	18547.63	57137.26	0.32	0.745
Population density	1839943	1051242	1.75	0.08
Voted for Republican sitting president	-2.21E+08	1.70E+08	-1.3	0.195
Voted for Democrat sitting president	-1.35E+08	1.94E+08	-0.7	0.486
Republican governor	7.89E+08	1.86E+08	4.25	0
Democrat governor	5.82E+08	1.96E+08	2.97	0.003
Senators both Republican	3.82E+08	1.26E+08	3.03	0.002
Senators both Democrat	4.52E+08	2.90E+08	1.56	0.118
Representatives majority Republican	-2.91E+08	1.47E+08	-1.98	0.048
Representatives majority Democrat	-5.77E+08	1.38E+08	-4.17	0
State Senate majority Republican	-4.02E+07	2.08E+08	-0.19	0.847
State Senate majority Democrat	-1.56E+08	2.04E+08	-0.76	0.445
State House majority Republican	3.25E+08	2.34E+08	1.39	0.164
State House majority Democrat	6.30E+07	2.20E+08	0.29	0.774
Swing State	-1.34E+08	1.78E+08	-0.75	0.452
Coastal	-6.56E+08	3.98E+08	-1.65	0.099
Constant	-6.03E+09	1.29E+09	-4.66	0

Observations = 1012; Groups = 46; Observations per group = 22  
 R<sup>2</sup> (within) = 0.7395 R<sup>2</sup> (between) = 0.8124 R<sup>2</sup> (overall) = 0.7722

*Procurement Spending:*

Procurement data is divided into defense procurement and other agency procurement. We will first examine this category in its aggregate. **Model 4.2** takes the natural logarithm of total procurement dollars to a state as the dependent variable:

Some important results are summarized below:

- An increase in the per capita tax burden of \$100 decreases procurement spending by 2%;
- An increase of \$1000 in per capita income increases procurement spending by 7.5%;
- A state that voted for the sitting Democrat president would receive 6.9% less procurement spending, while a state that voted for the sitting

Republican president would receive 4.4% more;

- A Democrat governor secures 2% more in procurement spending than a Republican;
- Alignment with the Republican Party in the Senate and the House of Representatives increases procurement spending by 5% and 6.7%, respectively;
- A State Senate controlled by the Republican Party increases procurement spending by 6%;
- States with a higher population density receive less, while coastal states receive more.

**Model 4.2: Total procurement (log of total dollars),  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Population	1.52E-07	1.99E-08	7.61	0
Population2	-3.01E-15	4.35E-16	-6.92	0
Tax burden per capita	-0.0001723	0.0000243	-7.09	0
Income per capita	0.0000757	0.0000109	6.92	0
Electoral vote per capita	148930.4	89947	1.66	0.098
Senators per capita	-479749.9	135018.1	-3.55	0
GSP per capita	-0.0000132	7.16E-06	-1.84	0.066
Population density	-0.0014491	0.0003756	-3.86	0
Voted for Republican sitting president	0.0448229	0.0204751	2.19	0.029
Voted for Democrat sitting president	-0.0688157	0.0253746	-2.71	0.007
Republican governor	0.1786423	0.0561854	3.18	0.001
Democrat governor	0.199523	0.0573112	3.48	0
Senators both Republican	0.0501997	0.0275168	1.82	0.068
Senators both Democrat	0.0162227	0.028652	0.57	0.571
Representatives majority Republican	0.0670286	0.031615	2.12	0.034
Representatives majority Democrat	0.0195326	0.0302592	0.65	0.519
State Senate majority Republican	0.1352461	0.0587794	2.3	0.021
State Senate majority Democrat	0.0597323	0.0577964	1.03	0.301
State House majority Republican	0.0587379	0.0623499	0.94	0.346
State House majority Democrat	0.0095875	0.0592178	0.16	0.871
Swing State	-0.0396704	0.0238295	-1.66	0.096
Coastal	0.4256061	0.2508402	1.7	0.09
Constant	19.91405	0.2596142	76.71	0

Observations = 1012; Groups = 46; Observations per group = 22  
 $R^2$  (within) = 0.4051  $R^2$  (between) = 0.7211  $R^2$  (overall) = 0.6991

Population naturally is a significant variable, but less so when compared with more formula driven federal transfers (such as retirement and disability spending). Model 4.2 shows once again a sharp contrast in procurement spending obtained by a state in respect to the pure party alignment with the President. States that voted for a Democratic president in office experience a negative impact on the procurement funds received, whilst the opposite effect is observed for states voting for a Republican president in office. Alignment with the Republican Party in both chambers of Congress shows a statistically significant payoff for the states.

*Defense Procurement:*

The amount of defense procurement spending received by states varies greatly, thus the dependent variable in this party politics model

is the natural log of total defense procurement (**Model 5.2**).

Some important results are summarized below:

- A \$100 increase in the per-capita tax burden of would decrease defense procurement spending by 2%;
- An increase in income per capita of \$1000 would increase defense procurement by 6.5%;
- A vote for the Republican sitting president increases the amount received by 8%, while a vote for the Democrat sitting president decreases the amount received by 14%;
- A Republican governor receives 1% less than a Democrat governor;
- Alignment with the Senate Republicans obtains 12% more in federal defense

**Model 5.2: Defense procurement (log of total dollars),  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	Z	P> z
Population	1.38E-07	2.36E-08	5.87	0
Population2	-2.75E-15	5.07E-16	-5.43	0
Tax burden per capita	-0.0001802	0.0000296	-6.1	0
Income per capita	0.0000654	0.0000142	4.62	0
Electoral vote per capita	214238.5	115393.7	1.86	0.063
Senators per capita	-815405	171608.9	-4.75	0
GSP per capita	-0.0000135	9.11E-06	-1.48	0.139
Population density	-0.0007083	0.0004378	-1.62	0.106
Voted for Republican sitting president	0.079833	0.0259467	3.08	0.002
Voted for Democrat sitting president	-0.1434677	0.0330835	-4.34	0
Republican governor	0.1644748	0.0698009	2.36	0.018
Democrat governor	0.1743239	0.0701872	2.48	0.013
Senators both Republican	0.1258597	0.0351279	3.58	0
Senators both Democrat	0.032765	0.0330572	0.99	0.322
Representatives majority Republican	0.1285109	0.0393571	3.27	0.001
Representatives majority Democrat	0.0693611	0.0377429	1.84	0.066
State Senate majority Republican	0.190191	0.0609494	3.12	0.002
State Senate majority Democrat	0.0684656	0.0604761	1.13	0.258
State House majority Republican	0.0307606	0.0642172	0.48	0.632
State House majority Democrat	-0.009664	0.0598982	-0.16	0.872
Swing State	-0.0424885	0.0281395	-1.51	0.131
Coastal	0.5057828	0.3026987	1.67	0.095
Constant	19.60839	0.3117529	62.9	0

Observations = 1012; Groups = 46; Observations per group = 22  
 $R^2$  (within) = 0.2835    $R^2$  (between) = 0.7478    $R^2$  (overall) = 0.7203

procurement spending, while a state's House delegation aligned with the Republicans receives 6% more than a House delegation aligned with the Democrats;

- A coastal state receives 50% more defense procurement dollars than a non-coastal state.

The same effects shown in total procurement spending hold in this model, and approximately the same percentage effects are observed when compared with model 5.1. Political effects are strikingly partisan, with states receiving high amounts of defense procurement contracts electing Republicans into office on the federal level. The geographic need for increased defense spending on the coasts is also reflected in the results of this model.

*Other Procurement:*

The other subcategory of procurement spending incorporates all non-defense procurement contracts. The dependent variable is the natural log of other procurement dollars sent to the state (**Model 6.2**).

Some important results of Model 6.2 are summarized below:

- An increase of \$100 in the tax burden per capita yields a 1% decrease in other procurement spending per capita;
- An increase of \$1000 in the income per capita yields a 7.8% increase in other procurement spending;
- The significant political variables include a vote for a Democrat president, which brings 5% more in other procurement spending, while having

**Model 6.2: Other procurement (log of total dollars)  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Population	1.72E-07	2.42E-08	7.09	0
Population2	-3.23E-15	4.61E-16	-7.02	0
Tax burden per capita	-0.0001314	0.0000281	-4.68	0
Income per capita	0.0000788	0.0000124	6.36	0
Electoral vote per capita	-5909.447	72628.79	-0.08	0.935
Senators per capita	36924.4	138566.6	0.27	0.79
GSP per capita	3.78E-06	9.12E-06	0.41	0.679
Population density	-0.0024475	0.0004607	-5.31	0
Voted for Republican sitting president	-0.028934	0.0242767	-1.19	0.233
Voted for Democrat sitting president	0.0517971	0.0257118	2.01	0.044
Republican governor	0.0122216	0.0550199	0.22	0.824
Democrat governor	0.0245577	0.0575562	0.43	0.67
Senators both Republican	-0.0749971	0.0308384	-2.43	0.015
Senators both Democrat	-0.0027997	0.0330974	-0.08	0.933
Representatives majority Republican	-0.0319727	0.0355713	-0.9	0.369
Representatives majority Democrat	-0.0263735	0.0345534	-0.76	0.445
State Senate majority Republican	-0.006446	0.059367	-0.11	0.914
State Senate majority Democrat	-0.0113264	0.06053	-0.19	0.852
State House majority Republican	-0.0223716	0.0749483	-0.3	0.765
State House majority Democrat	0.0344515	0.0707494	0.49	0.626
Swing State	-0.0334847	0.0272686	-1.23	0.219
Coastal	0.4707426	0.1613209	2.92	0.004
Constant	18.43333	0.2710489	68.01	0

Observations = 1012; Groups = 46; Observations per group = 22  
 $R^2$  (within) = 0.6314     $R^2$  (between) = 0.4411     $R^2$  (overall) = 0.4598

- two Republican senators decreases procurement spending by 7.5%;
- A coastal state receives 47% more in procurement spending than a non-coastal state.

Once again, the same tendencies hold for income per capita and tax burden per capita, similar to the effects observed in model 6.1. The pure party alignment model shows but two significant political variables in the executive branch at the federal and state levels.

**Model 7.2: Retirement and Disability (total dollars)  
46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Population	1250.511	197.1199	6.34	0
Population2	0.0000135	6.14E-06	2.2	0.028
Tax burden per capita	-410598.1	245416.7	-1.67	0.094
Income per capita	539355.8	70480.7	7.65	0
Electoral vote per capita	1.09E+15	3.89E+14	2.8	0.005
Senators per capita	-9.10E+14	5.27E+14	-1.73	0.085
GSP per capita	-108242.9	53423.07	-2.03	0.043
Population density	-462846.9	1213580	-0.38	0.703
Voted for Republican sitting president	1.08E+08	2.05E+08	0.53	0.598
Voted for Democrat sitting president	-2.85E+08	2.67E+08	-1.07	0.285
Republican governor	7.36E+08	2.28E+08	3.23	0.001
Democrat governor	7.65E+08	2.53E+08	3.03	0.002
Senators both Republican	3.52E+08	2.09E+08	1.69	0.092
Senators both Democrat	1.24E+08	2.86E+08	0.43	0.664
Representatives majority Republican	-5482342	2.18E+08	-0.03	0.98
Representatives majority Democrat	-8.29E+08	2.11E+08	-3.93	0
State Senate majority Republican	-3.58E+08	3.50E+08	-1.02	0.307
State Senate majority Democrat	-5.02E+08	3.10E+08	-1.62	0.105
State House majority Republican	7.04E+08	5.19E+08	1.36	0.175
State House majority Democrat	9.59E+07	4.92E+08	0.19	0.845
Swing State	3.59E+08	2.57E+08	1.4	0.163
Coastal	-9.86E+07	5.32E+08	-0.19	0.853
Constant	-8.41E+09	1.38E+09	-6.08	0

Observations = 1012; Groups = 46; Observations per group = 22  
 $R^2$  (within) = 0.6957     $R^2$  (between) = 0.9304     $R^2$  (overall) = 0.8833

*Retirement and Disability:*

**Model 7.2** takes the annual dollar amount of retirement and disability payments to individuals as the dependent variable.

Some important results are summarized below:

- An increase in income per capita by one dollar increases the amount received by \$540,000;
- An increase in tax burden per capita by one dollar decreases the amount received by \$463,000;
- Republican governors receive \$29 million less than Democrats, and two Republican senators bring \$228 million more than an all-Democrat or bipartisan Senate delegation.

Retirement and disability payments are undoubtedly determined in large part by population and economic variables; however this model suggests that Democrat governors and Republican senators bring more in such payments to their states.

**Model 8.2: Other Payments, 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Population	399.3192	177.0287	2.26	0.024
Population2	0.000029	4.64E-06	6.26	0
Tax burden per capita	-595906.2	225423.9	-2.64	0.008
Income per capita	579986.7	66538.25	8.72	0
Electoral vote per capita	1.13E+15	3.85E+14	2.92	0.004
Senators per capita	-1.06E+15	5.22E+14	-2.03	0.042
GSP per capita	-131042.9	45291.45	-2.89	0.004
Population density	1439482	948917.6	1.52	0.129
Voted for Republican sitting president	-5.85E+08	1.81E+08	-3.23	0.001
Voted for Democrat sitting president	2.20E+08	1.91E+08	1.15	0.25
Republican governor	6.62E+08	2.32E+08	2.85	0.004
Democrat governor	5.69E+08	2.48E+08	2.29	0.022
Senators both Republican	2.37E+08	1.67E+08	1.42	0.155
Senators both Democrat	1.79E+08	2.36E+08	0.76	0.448
Representatives majority Republican	2.44E+07	1.90E+08	0.13	0.898
Representatives majority Democrat	-8.93E+08	1.77E+08	-5.04	0
State Senate majority Republican	-8.73E+07	3.19E+08	-0.27	0.784
State Senate majority Democrat	-6.00E+08	3.04E+08	-1.98	0.048
State House majority Republican	6.10E+08	3.12E+08	1.96	0.05
State House majority Democrat	5.64E+07	3.00E+08	0.19	0.851
Swing State	-3.79E+07	2.17E+08	-0.17	0.861
Coastal	-6.02E+08	3.96E+08	-1.52	0.129
Constant	-7.05E+09	1.24E+09	-5.68	0

Observations = 966; Groups = 46; Observations per group = 21  
R<sup>2</sup> (within) = 0.7789 R<sup>2</sup> (between) = 0.8874 R<sup>2</sup> (overall) = 0.8360

*Other Payments:*

**Model 8.2** takes the annual dollar amount of other payments as dependent variable.

Some important results are summarized below:

- Population is a significant determinant of other payments received by the states, with \$400 dollars per person;
- A dollar increase in per capita tax burden decreases the amount received by \$596,000, while a dollar increase in GSP per capita decreases the amount received by \$131,000;
- A dollar increase in per capita income increases the amount received by \$580,000;
- Important political determinants show that a vote for the Republican sitting president decreases the amount received by \$585 million, while a

Republican governor brings slightly more in other payments than a Democrat counterpart;

- A majority Democrat House of Representatives delegation brings \$893 million less in other payments to their home state.

In the preceding models, population again is a very significant determinant in the “other payments” received by a state. Economic variables are significant, all at the 1% level. Taking a look at the other model, a vote for a Republican president will adversely impact a state’s other payments whereas a vote for a Democrat president has no significant impact. A state that elects more Republicans to the House of Representatives elicits no statistically significant impact whereas there is a strong negative impact where the Representatives are mostly Democrat.

**Model 9.1: Net Fiscal Benefit (per capita), 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Income per capita	0.0564391	0.0280832	2.01	0.044
GSP per capita	-0.0639696	0.0210618	-3.04	0.002
Population density	-3.2228	0.6818505	-4.73	0
Electoral vote per capita	-3.17E+08	1.37E+08	-2.31	0.021
Senators per capita	5.44E+08	1.51E+08	3.6	0
Voted for sitting president	-143.2136	79.26503	-1.81	0.071
President-governor alignment	141.2554	62.67475	2.25	0.024
Senate majority alignment	36.34161	56.76428	0.64	0.522
House majority alignment	150.3832	57.53988	2.61	0.009
President-State Congress majority alignment	279.6451	81.22469	3.44	0.001
Coastal	251.3909	192.9586	1.3	0.193
Swing State	-28.98518	67.62442	-0.43	0.668
Constant	1216.27	385.2238	3.16	0.002

Observations = 1012; Groups = 46; Observations per group = 22  
 R<sup>2</sup> (within) = 0.0648 R<sup>2</sup> (between) = 0.3720 R<sup>2</sup> (overall) = 0.2772

**Hypothesis 3: The net fiscal benefit per capita can be allocated according to a majority alignment model or political party alignment model.**

*Net Fiscal Benefit:*

Finally, the net fiscal benefit is defined as the amount of public services received minus the amount of taxes paid. This was calculated using the Tax Foundation data as a baseline, distributing the federal deficit and allowing for some shifting of corporate taxes. The net fiscal benefit uses total expenditures as the amount of public services delivered. Excluding Hawaii, Alaska, Maryland, Virginia and Washington D.C. from the data facilitates comparison as many of the expenditures would have otherwise be considered public goods provided, in some part, to the country as a whole.

The model differs from others in that the net fiscal benefit is modeled in per capita terms, for both models, as there is no precedent for a dependent variable of this kind. A regression with net fiscal benefit per capita as dependent variable is shown in **Model 9.1**.

Some important results are summarized below:

- For every dollar increase in per capita income, a state receives 5 cents in net fiscal benefit per capita;
- For every dollar increase in per capita GSP, a state receives 6 cents less in net fiscal benefit;
- As population density increases, a state receives less;
- The alignment between the president and governor procures \$141 more in net fiscal benefit per capita;
- State delegates to the House of Representatives aligned with the majority party bring \$151 more to the state in per capita terms;
- Alignment between the President’s party and the majority party of the state’s congress brings \$280 more per capita.

**Model 9.2: Net Fiscal Benefit (per capita), 46 American States, 1983-2004**

Variable	Coefficient	Standard Error	z	P> z
Income per capita	0.0618913	0.0242216	2.56	0.011
GSP per capita	-0.0514396	0.0178969	-2.87	0.004
Population density	-3.13219	0.6437139	-4.87	0
Electoral vote per capita	-4.70E+08	1.29E+08	-3.63	0
Senators per capita	6.22E+08	1.49E+08	4.17	0
Voted for Republican sitting president	400.92	68.5623	5.85	0
Voted for Democrat sitting president	-523.9599	83.60368	-6.27	0
Republican governor	97.92472	231.9291	0.42	0.673
Democrat governor	235.9959	235.9239	1	0.317
Senators both Republican	203.3257	70.7438	2.87	0.004
Senators both Democrat	-31.79896	77.00082	-0.41	0.68
Representatives majority Republican	40.17641	86.45073	0.46	0.642
Representatives majority Democrat	-159.1465	91.34947	-1.74	0.081
State Senate majority Republican	621.8487	151.9282	4.09	0
State Senate majority Democrat	544.5415	150.2732	3.62	0
State House majority Republican	217.9445	206.6197	1.05	0.292
State House majority Democrat	141.2313	208.8971	0.68	0.499
Swing State	-9.724132	66.49566	-0.15	0.884
Coastal	246.093	186.7182	1.32	0.188
Constant	229.4418	546.0252	0.42	0.674

Observations = 1012; Groups = 46; Observations per group = 22  
 $R^2$  (within) = 0.2457     $R^2$  (between) = 0.2614     $R^2$  (overall) = 0.2537

Some important results of **Model 9.2** are summarized below:

- For every dollar increase in per capita income, a state receives 6 cents in net fiscal benefit per capita;
- For every dollar increase in per capita GSP, a state receives 5 cents less in net fiscal benefit;
- As population density increases, a state receives less per person;
- A vote for the Republican sitting president procures \$401 in net fiscal benefit per capita, while a vote for the Democrat sitting president yields \$524 less in net fiscal benefit per capita;

- Two Republican senators bring \$203 more per capita than a split or all-Democrat Senate delegation;
- A majority of a state's representatives to the House aligned with the Democratic Party brings \$173 less per capita than a split or majority Republican delegation;
- Alignment between the President's party and the majority party of the state's congress brings \$280 more per capita.



**Table 6: Summary of Majority Alignment Model Results**

	<i>Dependent Variable (\$ per capita)</i>				
	Federal expenditures	Defense expenditures*	Grants awarded	Retirement and disability	Net fiscal benefit
	(H1)	(H1)	(H1)	(H1)	(H3)
Tax burden per capita	-0.5424816 (-11.6)	-0.000194 (-12.9)	-0.2217028 (-14.3)	-0.1701692 (-7.75)	N/A
Income per capita	0.325597 (17.09)	0.000041 (5.75)	0.1125848 (21.37)	0.112464 (12.49)	0.0564391 (2.01)
GSP per capita	0.0030378 (0.23)	0.000011 (2.28)	-0.0043025 (-1.26)	-0.0081117 (-1.44)	-0.0639696 (-3.04)
Voted for sitting president	-113.0688 (-2.86)	-0.0500139 (-3.09)	-21.34326 (-1.57)	-13.3325 (-0.55)	-143.2136 (-1.81)
President-governor alignment	52.74592 (1.47)	0.0641802 (4.48)	-2.091315 (-0.19)	11.60098 (0.63)	141.2554 (2.25)
Senate majority alignment	0.198546 (0.01)	0.0102201 (0.72)	-0.6338944 (-0.06)	-7.774685 (-0.45)	36.34161 (0.64)
House majority alignment	41.3899 (1.25)	0.052483 (3.93)	-4.433571 (-0.38)	5.808874 (0.32)	150.3832 (2.61)
President-State Congress majority alignment	204.8054 (4.62)	0.0331966 (1.9)	58.19225 (4.31)	15.91784 (0.64)	279.6451 (3.44)

\* Natural log of per capita defense expenditures (coefficient x 100 = % change)

\*\* Numbers in parentheses are z-statistics

**Summary of Empirical Results and Political Analysis:**

The empirical results reveal and confirm many of the results in earlier literature, and often confirm the stated public policy objectives of American political parties. The pure partisan politics model revealed that Republicans are more likely to reward their base. The model shows a more Democratic inclination towards “capturing the middle,” as there is a significant negative effect with the funds allocated to states that voted Democrat Bill Clinton into office in all procurement spending categories, defense expenditures and retirement and disability payments. States that send a majority of Democrats as House Representatives also see a negative impact on their finances in the categories of grants awarded, defense procurement spending and defense expenditures, whereas states represented by a majority Republican House

contingent are favorably financed in defense expenditures and the subcategory of defense procurement.

Nonetheless the evidence for politically-motivated redistribution in formula-based, low-variation programs such as payments for retirement and disability and other payments to individuals is minimal. The programmatic redistribution reflects “prevailing ideological beliefs about equality” and the amounts tend to “change only when there is a major ideological shift in the population.” The seeds for such a shift were sown with the fallout from the Democrat-sponsored Civil Rights Act; President Johnson aptly predicted that the Democrats had “lost the South for a generation.” The Republicans became the party of the American South, swelling and expanding with the neoconservative shift that occurred in the early 1980s.

**Table 7: Summary of Political Party Alignment Model Results**

	<i>Dependent Variable (total dollars)</i>				
	<b>Federal expenditures</b>	<b>Defense expenditures*</b>	<b>Grants awarded</b>	<b>Retirement and disability</b>	<b>Net fiscal benefit**</b>
	<b>(H1)</b>	<b>(H1)</b>	<b>(H1)</b>	<b>(H1)</b>	<b>(H3)</b>
Tax burden per capita	-2492114 (-3.85)***	-0.00015 (-7.94)	-893806 (-4.16)	-410598.1 (-1.67)	N/A
Income per capita	1577879 (7.83)	0.0000434 (5.39)	444688.1 (6.91)	539355.8 (7.65)	0.0618913 (2.56)
GSP per capita	-78557.1 (-2.04)	0.0000028 (0.55)	18547.63 (0.32)	-108243 (-2.03)	-0.0514396 (-2.87)
Voted for Republican sitting president	-784000000 (-1.55)	0.0289684 (1.75)	-221000000 (-1.3)	108000000 (0.53)	400.92 (5.85)
Voted for Democrat sitting president	768000000 (0.16)	-0.0780872 (-3.99)	-135000000 (-0.7)	-285000000 (-1.07)	-523.9599 (-6.27)
Republican governor	3240000000 (5.54)	0.1136302 (2.22)	789000000 (4.25)	736000000 (3.23)	97.92472 (0.42)
Democrat governor	2760000000 (4.41)	0.1310102 (2.53)	582000000 (2.97)	765000000 (3.03)	235.9959 (1)
Senators both Republican	1570000000 (3.38)	0.0520171 (2.53)	382000000 (3.03)	352000000 (1.69)	203.3257 (2.87)
Senators both Democrat	382000000 (0.58)	-0.0015471 (-0.08)	452000000 (1.56)	124000000 (0.43)	-31.79896 (-0.41)
Representatives majority Republican	-302000000 (-0.53)	0.0503117 (2.01)	-291000000 (-1.98)	-5482342 (-0.03)	40.17641 (0.46)
Representatives majority Democrat	-2700000000 (-4.88)	0.0466752 (2.1)	-577000000 (-4.17)	-829000000 (-3.93)	-159.1465 (-1.74)
State Senate majority Republican	-395000000 (-0.48)	0.1563138 (3.68)	-40200000 (-0.19)	-358000000 (-1.02)	621.8487 (4.09)
State Senate majority Democrat	-1210000000 (-1.5)	0.0737653 (1.75)	-156000000 (-0.76)	-502000000 (-1.62)	544.5415 (3.62)
State House majority Republican	1520000000 (1.98)	0.0199451 (0.37)	325000000 (1.39)	704000000 (1.36)	217.9445 (1.05)
State House majority Democrat	-646000000 (0.09)	-0.0127545 (-0.25)	63000000 (0.29)	95900000 (0.19)	141.2313 (0.68)

\* Natural log of defense expenditures (coefficient x 100 = % change)

\*\* Net fiscal benefit is expressed in per capita terms

\*\*\* Numbers in parentheses are z-statistics

This shift turned the country away from post-New Deal egalitarianism towards neoconservatism, signaled by the election of Ronald Reagan and further reinforced with the Republicans taking control of the United

States Congress in 1994 and the election of George W. Bush in 2000. The shifts in power have both signaled a change in the debate over federalism and welfare state decentralization. The “devolution revolution” proclaiming

the end of “big government” has undoubtedly been a mixed bag. Welfare was reformed in the mid-1990s with the passing of the Personal Responsibility and Work Opportunity Reconciliation Act, yet the “beast” of government has yet to be starved (Beland and de Chantal, 2004). Rather, neo-conservatism, as compared with earlier United States conservatism may be characterized by an idealist stance on foreign policy, a lesser social conservatism, and a much weaker dedication to a policy of minimal government.

Evidence for partisan political rewards in higher-variation defense-related spending categories, an explicit neoconservative priority, is strong. Defense procurement dollars are show a positive effect for states that voted for a sitting Republican president, and states that send two Republican Senators to Capitol Hill. A state with two Republican Senators can expect 360 million more than a state with a bipartisan delegation, and nearly 700 million more than a state with an all-Democrat Senate delegation. Effects of similar magnitude hold for the category of total defense expenditures.

Although it may be tempting to posit a purely partisan model of federal spending, it is most important to recognize the impacts of political alignment to the president and alignment with the majority parties of Congress, with the most interesting impacts found in different categories of spending. A vote for the sitting president elicits a negative impact on the lower-variation categories of grants awarded, retirement and disability and other payments. Alignment between the president and the governor, and the president and the controlling party of a state’s Congress is significant for different categories. Alignment between the federal and state executive branch procures more defense spending dollars for a state, whereas alignment between the federal executive branch and the state legislative branch has a positive impact on the lower-variation expenditure categories of grants awarded, other payments and the global category of total federal expenditures. This alignment variable exhibits a high degree

of statistical significance and has never been studied before. Alignment with the Senate majority brings more money to a state in total procurement, whereas the impact in other categories is negligible. Alignment with the House majority has a negative impact on other payments, retirement and disability, other procurement and grants awarded to a state and a positive impact on all defense-related spending categories. It is difficult to isolate the impact of house members, as their primary responsibility is to their district. Districts are drawn through a political process, and are exceedingly prone to gerrymandering and do not necessarily adhere to any geo-political boundaries. As the district-by-district dataset is not available for the years chosen in this study, controlling for such discrepancies is rather difficult.

A look at the allocation of the net fiscal benefit is can be modeled using both the partisan and the alignment models. In both models, using per capita amounts as the dependent variable, similar effects are observed for income per capita and GSP. Looking at the partisan model, a vote for the Republican president and having two Republican senators bodes well for a positive net fiscal benefit. On the contrary, an allocation of the net fiscal benefit using the majority alignment model shows a positive relation with all political variables, with President-Governor alignment, President-State Congress majority alignment and Senate majority alignment all significant, particularly the Senate variable with a significance level of 1%. A comparison of the distribution of the net fiscal benefit and political alignment follows in a graphic presentation. The importance of alignment with state-level executive and legislative alignment with the federal executive branch has grown significantly during the past twenty years, coinciding with the rise of the Republican Party across the country.

The following figures present a graphic comparison of the political and economic results in respect to the net fiscal benefit. Data is presented for states that were not included in the empirical analysis for graphic continuity.

**Figure 5: Net Fiscal Benefit 2004**

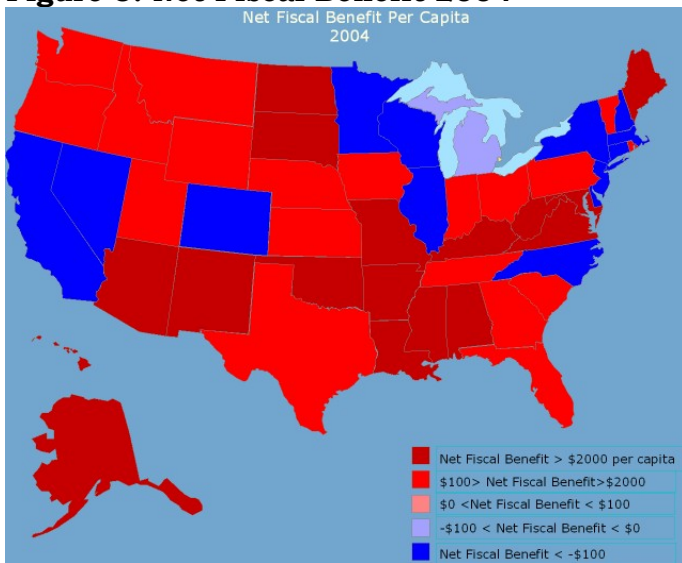


Figure 5: States in blue receive a negative net fiscal benefit, whereas states in shades of red receive varying degrees of a positive net fiscal benefit.

**Figure 7: Net Fiscal Benefit 1994**

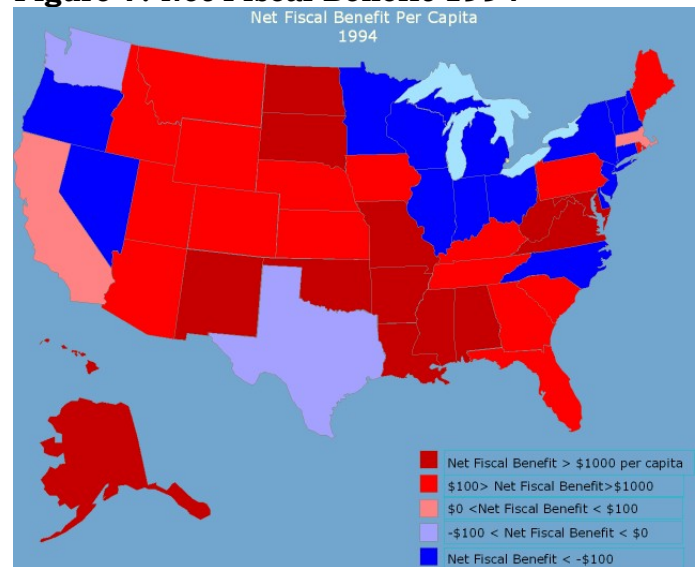


Figure 7: The states in shades of red receive a positive net fiscal benefit.

**Figure 6: President-Governor Alignment**

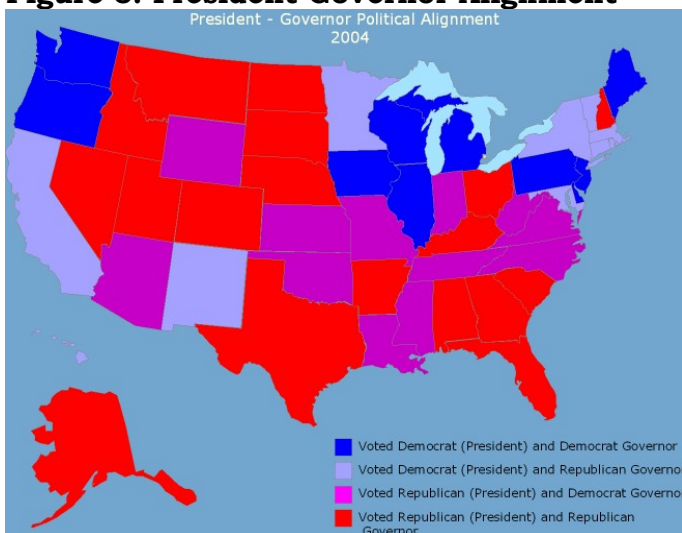


Figure 6: The light blue states and the red states in the second graph benefit from party alignment with the sitting president, George W. Bush and their state's Republican governor.<sup>11</sup>

**Figure 8: President-Governor Alignment, 2004**

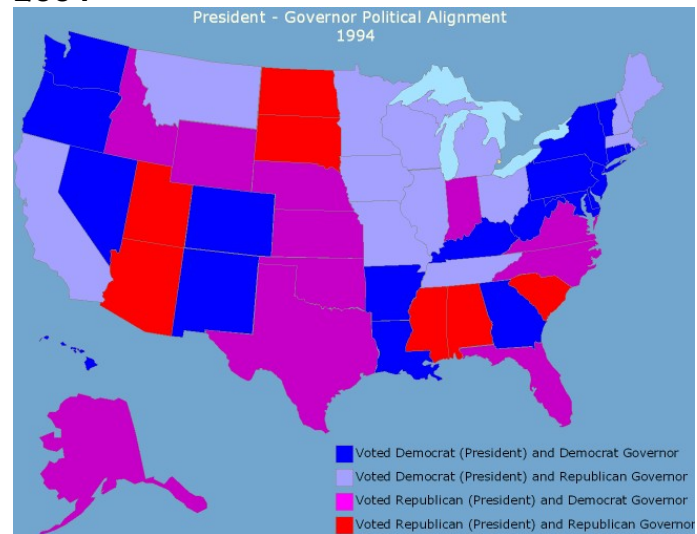


Figure 8: States in purple and dark blue are aligned with the president and governor of the same party. All states in shades of blue on the second graph voted for the Democratic sitting president, Bill Clinton, whereas the states in red and purple voted the Republican presidential ticket.<sup>12</sup>

<sup>11</sup> Source: Consolidated Federal Funds Report, The Books of the States, author's own calculations.

<sup>12</sup> Source: Consolidated Federal Funds Report, The Books of the States, author's own calculations.

**Figure 9: Net Fiscal Benefit 1984**

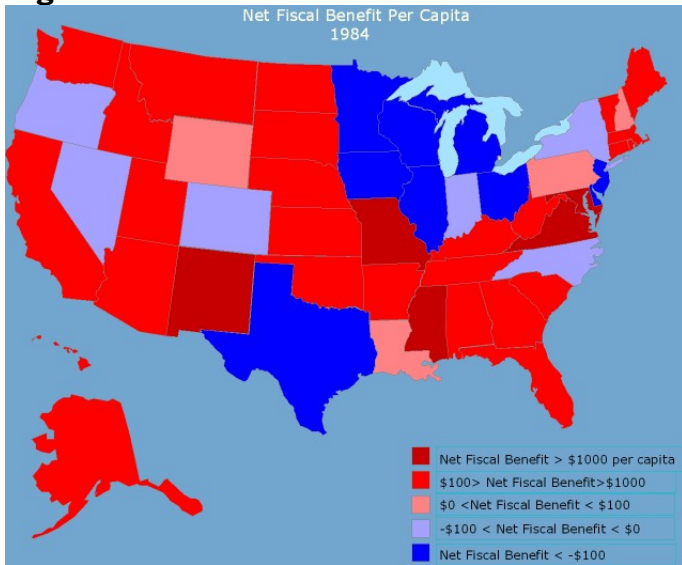


Figure 9: The states in shades of red receive a positive net fiscal benefit; the states in blue receive a negative net fiscal benefit.

**Figure 10: President-Governor Alignment, 1984**

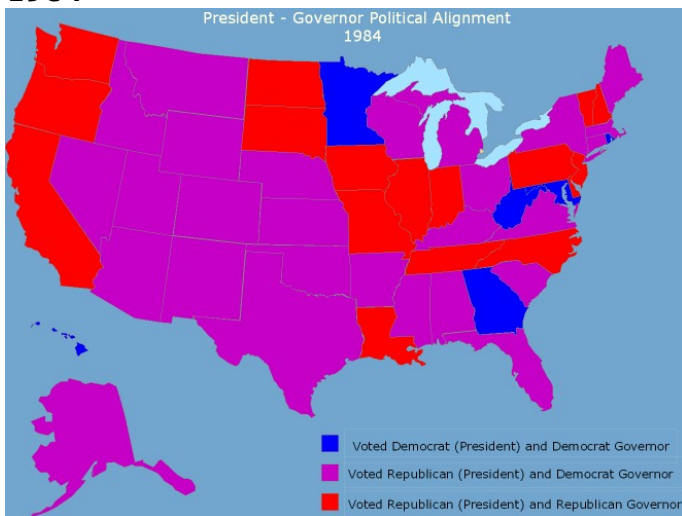


Figure 10: The states in red only are aligned with a Republican governor and the Republican president, Ronald Reagan. From this map it is clear that there have been steady Republican gains on the state executive level during the past twenty years.<sup>13</sup>

**Conclusion:**

The graph showing Democratic-voting states in 2004 presidential election does provide some interesting anecdotal evidence for a “red state-blue state” divide. Nonetheless, the empirical results from modeling federal transfers to the states and allocating the net fiscal benefit to the states show that in low variation categories where many payments are formula-based, there is little variation in monies transferred to the states. Other categories, particularly all defense-related spending, show an inclination towards pork-barrel politics that reward the Republican Party faithful, the “base.” It is altogether unsurprising that defense spending figures more heavily into Republican-represented states, as the prevailing neoconservative element tends to prioritize defense spending. “Red” states voting for the Republican president in the last presidential election also saw a largely positive net fiscal benefit.

Particular results of interest were alignment variables of high significance, showing alignment with the Senate majority for the allocation of the net fiscal benefit, Presidential-Gubernatorial alignment for many spending categories and the allocation of the net fiscal benefit, and President-State Congress majority party alignment. The latter, previously unstudied political variable is strongly correlated with a positive net fiscal benefit to a state, as well as increased spending in formula-based expenditures.

<sup>13</sup> Source: Consolidated Federal Funds Report, The Book of the States, author’s own calculations.

## **Red States, Blue States : Examining Federal Transfers to the States, 1983-2004**

### **Abstract**

*This study seeks to explain the transfer of U.S. federal funds to the states by examining the political and economic motivators in certain federal spending categories, including total expenditures, defense expenditures, procurement contracts, grants awarded, loan and insurance spending, and the net tax burden. This study updates previous research in federal transfers, using twenty-two years (1983-2004) of electoral, population, spending, taxation and state economic data for the states. Using panel data methodology in STATA, various political and economic variables are examined for their impact on this era of neo-conservative resurgence in the United States, particularly interaction variables that highlight political party alignment between the executive branches of federal and state government, alignment with the majority controlling parties in the legislative branch and various interaction and political party variables.*

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