

Taxes and Deficits: New Evidence

("The \$1.59 Study")

by Richard Vedder, Lowell Gallaway and Christopher Frenze

Prepared for
Senator William V. Roth, Jr. (R-DE)
Senior Republican Senator

and

Representative Richard K. Arney (R-TX)
Ranking Republican

Joint Economic Committee

October 30, 1991

Executive Summary

In recent years higher taxes have been repeatedly justified to reduce the Federal budget deficit. This strategy has been based on a self-styled "pragmatic" approach, pragmatism being defined as what works. Concern about the effect of new taxes on the economy, or on the spending habits of public officials, was given short shrift by pragmatism. The crowning triumph of this strategy was the 1990 budget agreement, which raised taxes \$160 billion, supposedly to reduce the deficit. However, the facts contained in this study and elsewhere show that Federal spending actually accelerated after the 1990 tax increases were enacted, and budget deficits have hit record levels. The only problem with this fiscal pragmatism is that it doesn't work.

This stimulation of higher deficits by tax increases is not surprising. An earlier study by the same authors on the postwar years 1947-86 found that every \$1.00 in new taxes generated \$1.58 in new spending. Other research as well as practical knowledge about how Congress operates suggests the same general conclusion: new revenues will be spent on more or bigger programs rather than deficit reduction. The hemorrhaging of spending under the 1990 budget summit was predictable and in fact predicted by its Congressional opponents. The only mystery is how anyone could believe that Congress would not spend all of the new taxes, and then some.

This new study reaches several conclusions about the relationship between taxes and spending, based on an analysis of 1947-90 data, and more recent budget information:

- The tax-deficit relationship has remained fairly constant in recent years with no evidence that the tendency of new taxes to stimulate new spending has decreased. If anything, the new data suggests a slight increase so that \$1.00 of new taxes would be expected to generate \$1.59 of new spending.
- Over the history of the United States, the tendency of Congress to spend additional taxes rather than devote them to deficit reduction has climbed to an all time high. In the first decades of our fiscal history, tax increases were associated with declines in Federal deficits. Currently, increases in taxes have resulted in sharply higher deficits.
- The budget "deficit reduction" agreement is a dismal failure which has pushed taxes and budget deficits higher than ever before.
- The tax-deficit data at the state level do not show that tax increases spur higher deficits. This suggests that institutional constraints such as constitutional restrictions on deficit spending, and line item veto power of governors, may be useful tools in controlling the spending habits of legislators.

William V. ROTH, JR.
Senior Republican Senator
Joint Economic Committee

TAXES AND DEFICITS: NEW EVIDENCE **("The \$1.59 Study")**

by Richard Vedder, Lowell Gallaway and Christopher Frenze^[1]

In a study prepared in 1987 for the Ranking Republican Senator of the Joint Economic Committee, we argued that the econometric evidence for the 1947-86 period suggested that every \$1.00 of new Federal tax and nontax revenues was associated with \$1.58 in new Federal spending, implying that budget deficits **rose** with increases in the aggregate Federal tax rate.^[2] This new follow-up study reaches six conclusions:

First, the tax-deficit relationship observed in 1987 has been maintained with little change with the passage of four more years of American Federal fiscal history. In other words, the 1987 to 1990 experience suggests that there has been no evidence of any diminution in the high Federal marginal propensity to spend new tax revenues; if anything, that propensity to spend has risen.

Second, the evidence suggests that tax increases have been associated with dramatic increases in expenditures for income transfers of various kinds, but with actual **decreases** in purchases of defense-related goods and services. Non-defense service spending is not affected by changing tax revenues. Thus new tax initiatives seem to be closely tied to efforts to redistribute income rather than offer new governmental services; clearly those initiatives have tended to increase, not reduce, budget deficits.

Third, the historical evidence from the first administration of President George Washington to the present shows that the Federal propensity to spend new tax revenues has grown consistently over time, as the political advantages of new spending have increased. At one time, new taxes were associated with very significant deficit reduction, but not in recent decades. Furthermore, the 1990 budget deal, which resulted in the largest tax increase in U.S. history, also generated the largest deficits on record.

Fourth, the findings are better understood by use of a simple cost-benefit theoretical framework of fiscal behavior developed by Dwight Lee of the University of Georgia and Richard Vedder of Ohio University, that draws on the laws of demand and supply. In the context of the findings reported here, the framework reveals that in the postwar era **there has been a pronounced increase in the marginal political benefits to spend**; Put differently, "the political demand for spending has increased."

Fifth, the positive relationship between taxation and deficits observed at the Federal level is **not** obtained at the state and local level, suggesting that different institutional arrangements constraining state governments, including balanced budget constitutional amendments, have a real impact on political and thus fiscal behavior. This suggests that those interested in constraining the amount of spending growth to or below the growth in revenues might learn from the experience of the states.

Sixth, a variety of other studies tend to confirm the findings reported here. Thus our confidence in the basic finding has been strengthened, not diminished, since the initial 1987 study.

1. The Tax, Spending and Deficit Relationship, 1947-90

Taking data on Federal expenditures and Federal revenues from the national income accounts for the calendar years 1947 through 1990, we regressed Federal tax (revenue) levels against Federal spending levels.[3] The statistical results indicate that each \$1.00 in tax revenues was associated with \$1.59 in expenditures, with the result highly significant statistically.[4]

In 1987, we argued that additional variables might affect receipts and expenditures and thus should be incorporated into the analysis for control purposes. For example, receipts and expenditures of the Federal government vary with the business cycle. We accordingly introduced a variable measuring real economic growth, **Growth**, and the rate of joblessness, **Unemployment**. [5] Similarly, military spending presumably grows with major threats to national security as reflected in wars. Accordingly, we introduced a "war dummy" variable, **War**. [6] Finally, we introduced a variable for unanticipated inflation, **Inflate**, defined as inflation in the year in question minus the average of the previous three year's inflation rate. [7] Introducing all of these additional variables makes a negligible difference in the reported tax-spend relationship:

$$\begin{aligned}
\text{Spending} = & 14.453 + 1.587 \text{ Taxes} + 0.0806 \text{ Unemployment} \\
& (3.442) \quad (6.383) \quad (4.087) \\
& -0.044 \text{ Growth} + 0.480 \text{ War} - 0.128 \text{ Inflation} \\
& (0.525) \quad (0.833) \quad (1.496) \\
\bar{R}^2 = & .782, D-W = 2.033, F\text{-Statistic} = 22.972,
\end{aligned}$$

where the numbers in parentheses are t-statistics. Excepting the unemployment variable, all the control variables are statistically not significant.

The model explains well over three-fourths of the variation in spending over time, compared with about two-thirds in the similar model reported four years ago. The tax-spend relationship has actually strengthened slightly, suggesting the propensity to spend out of tax revenues has, if anything, increased with time." [8]

In this regard, in 1987 we stated "perhaps the changing institutional framework (e.g., the Gramm-Rudman budget law) has changed sufficiently so that the historical experience is not valid, although we are highly skeptical of that perspective given the growing indications the Gramm-Rudman limits are not going to be met in 1987." [9] It appears our skepticism was justified, that the changes in effect in the late 1980s made no discernible impact on improving the budget deficit by constraining spending.

II. Disaggregating the Tax-Spend Relationship

Using alternative versions of the model (including, even, somewhat different time periods), the evidence is extremely consistent with the view that increases in tax revenues are associated with even bigger changes in Federal spending. Nonetheless, it is possible that the infusion of Federal revenues has a differential impact on spending. Have all forms of spending been equally enhanced by increases in tax revenue?

Following standard Federal classifications, we divided spending into six categories: purchase of defense goods and services; purchases of non-defense goods and services; transfer payments; grants-in-aid to state and local governments; net interest payments; and "other," a category that primarily includes subsidies to government-owned business enterprises. Using regression analysis, we then looked at the relationship between Federal tax (and nontax) receipts and expenditures in each of these categories over the 1947-90 period. In doing so, we used fiscal year data (because the detailed expenditures were more readily available on that basis) rather than calendar year data as in the 1987 study. [10] We also dispensed with inclusion of control variables in the regressions, mainly because they seem to make no difference in the results relating to the tax-spend relationship, but also because of data difficulties on a fiscal year basis.

Using the fiscal year data, we observe that each \$1.00 in new revenues is associated with \$1.57 in new spending, as opposed to \$1.59 obtained using the calendar year data. Table 1 indicates the tax-spending relationship for each of the six categories of spending outlined above.

Table 1 -- Estimated Impact of \$1.00 Increase in Taxes on, 1947-90

Spending Category	Impact of \$1.00 Increases in Federal Tax Revenues	Statistical Significance
Transfer Payments	+\$1.15	1 percent*
State and Local Grants-in-Aid	+\$0.48	1 percent*
Net Interest Payments	+\$0.31	1 percent*
"Other" Payments (mostly subsidies to government enterprises)	+\$0.03	5 percent*
Defense Goods and Services	-\$0.39	1 percent*
Non-Defense Goods and Services	+\$0.00	Insignificant
All Spending	+\$1.57	1 percent*

* Probability that the observed positive or negative relationship could have occurred by chance -- that is, the observed relationship is spurious.

Source: See text.

There is a very strong positive relationship between tax revenues and transfer payments. Indeed, spending on transfers alone changed more than \$1.00 for each dollar of tax revenues. Similarly, there are important increases in grants-in-aid and interest payments associated with new taxes, and a minor one between taxes and "other" expenditures. The interest-tax relationship is interesting. It implies that: one, increased taxes increased deficits and thus interest payments on the national debt; two, increased taxes served to increase interest rates on government securities (perhaps because higher nominal interest rates are necessary after taxes rise to obtain any given after-tax return), or, three, both of the above factors.

Transfer payments, grants in aid, interest payments and "other" all involve the redistribution of income. Money received from taxpayers and, through borrowing, from new bondholders, is distributed to individuals, governments, old bondholders, and government enterprises. Together, each \$1.00 in new taxes is estimated to be associated with nearly \$1.97 in income transfers in one form or the other.

By contrast, new tax revenues are associated with **reductions** in government purchases of goods and services. There is no relationship between non-defense purchases and taxation. Regarding defense spending, a dollar in new tax revenues is estimated to be associated with a 39-cent **reduction** in defense spending.

These results suggest that new tax monies are associated not only with greater deficits but with **reductions** in traditionally provided government services. The results lend support to those who argue that tax increases promote income redistribution, or what some economists call "rent-

seeking," the use of political power by special interest groups to obtain added income without a corresponding provision of added labor or capital services.

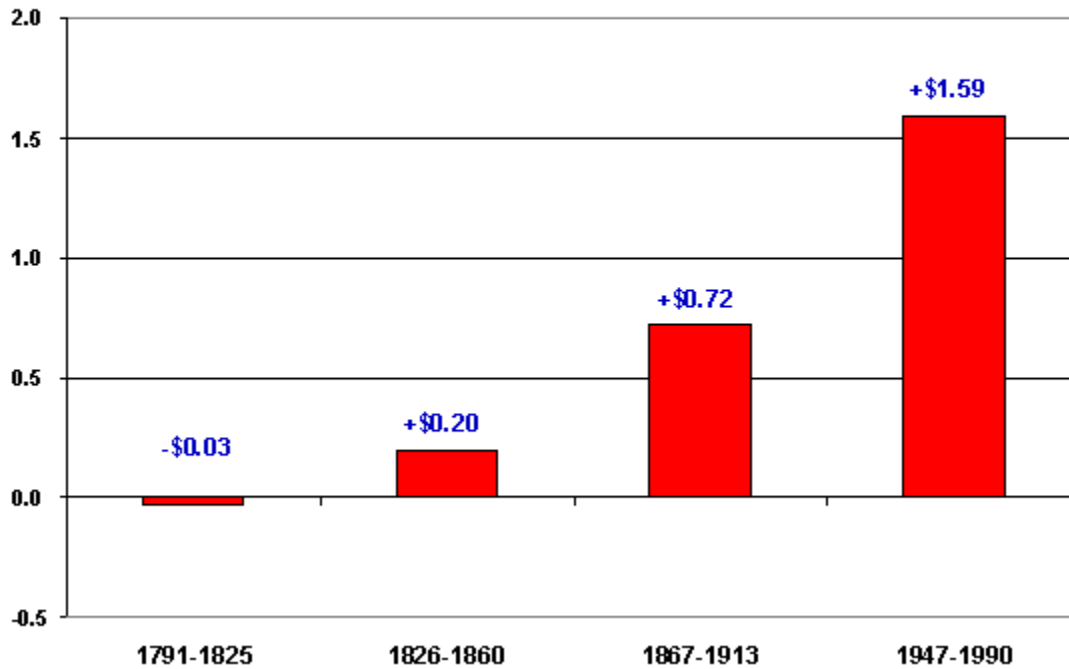
III. Some Historical Evidence

The tax-spend-deficit relationship has changed drastically over time. We used regression techniques similar to those used initially to estimate the relationship between spending and taxation for four fairly lengthy (at least 35 years), predominantly peacetime periods in American history: 1791-1825, 1826-1860, 1867-1913, and 1947-1990. Other control variables, shown unimportant above, are excluded mainly because of data limitations.

The results are summarized in Graph 1. In the earliest years of the Republic, revenue increases were **not** associated with spending increases; indeed, spending fell slightly (the type of change envisioned in the 1990 budget agreement). Even as late as 1867 to 1913, tax increases seem to induce some spending increases, but also some deficit reduction (if spending rises 72 cents per dollar of new taxes, then the other 28 cents of that dollar goes for deficit reduction).

Over time, the Federal government's "marginal propensity to consume" has risen consistently. The political benefits of spending are on the rise. Whereas, in an earlier era, shifts in the deficit or tax supply curve raised the possibility that a tax increase could lead to some deficit reduction, that has not been the case since World War II (and was becoming less the case even before then).

Graph 1
Estimated Spending Associated
with \$1.00 Increase in Taxes



Fiscal Outlook Under the 1990 Budget Agreement

All of the data needed to empirically measure the fiscal results of the 1990 budget agreement are not yet available. However, currently available information does indicate the general direction of tax and spending trends under this agreement, and their conformity to the model presented earlier. A review of the facts shows that the analytical framework presented in 1987 and in this paper is more than adequate to explain the increases in Federal spending and deficits after adoption of the 1990 tax increases.

On the basis of the public choice assumptions presented in our 1987 paper, several results of the 1990 budget agreement were predictable. These results follow from the notion of "fiscal illusion," a distortion of the cost-benefit calculus by the way publicly provided goods and services are financed. Fiscal illusion explains how the actual results of policymakers' decisions can contradict the expressed aims of the policymakers.

One form of fiscal illusion, "entails justifying additional taxation for a relatively popular purpose, though revenues will actually be diverted by government to other uses deemed less popular. For example, tax increases may be justified to the public as a means of deficit reduction, whereas the actual result will be to stimulate additional spending on programs favored by influential special interest groups. This 'bait and switch' tactic would be all the more effective under complex or incoherent budget processes which make taxpayer oversight almost impossible." [\[11\]](#)

Screened from the public by an increasingly complicated and arcane budget process, policymakers in 1990 could have been expected to justify the largest tax increase in U.S. history by claiming it was needed to produce the largest deficit reduction ever. However, the tax model used here predicts that the actual result of the large tax increase would be to spur higher, not lower, Federal spending. As a result, Federal deficits would be expected to rise to record levels. Unfortunately, this is precisely what has transpired under the 1990 budget agreement.

The budget agreement initially was presented as a cumulative reduction of nearly \$500 billion in the deficit over a five-year period. About \$160 billion in projected new revenues were raised, \$18 billion in the first year and over \$30 billion annually in each of the next four years. Around \$120 billion was supposedly cut from hypothetical increases in domestic program spending over the same period, while debt service savings amounted to \$59 billion. Projected defense spending was trimmed \$91 billion.

It was claimed that \$2 in spending "cuts" were provided for every \$1 in tax increases.[\[12\]](#) Of course, virtually all of the spending "cuts," aside from those in defense, were from projected "baseline levels" which assume ever higher spending levels. Unfortunately, an examination of actual Federal outlays shows no evidence of actual spending control.

It will be recalled that the 1990 budget agreement was justified as a draconian measure to address the urgent "crisis" caused by deficit spending. Nonetheless, a review of budget data after the agreement reveals the unsurprising fact that Congressional spending is rising briskly. Under current circumstances, one of the best tests of the restraint imposed by the agreement is the trend in domestic discretionary spending, annually appropriated expenditures directly under

Congressional control. A serious spending control measure to reduce the deficit would at least be expected to restrain this category of spending.

However, as Table 2 shows, domestic discretionary spending under Congressional control has actually accelerated under the budget agreement. Between fiscal 1990 and 1991, domestic discretionary spending jumped from \$182.5 billion to \$199.8 billion, an increase of \$17.3 billion, or 9.5 percent. In fiscal 1992, congressional spending in this category is projected to increase at least another \$12.2 billion. Over the two fiscal years 1991-92, domestic discretionary spending will increase 16 percent, one of its fastest growth rates on record, slowing slightly to 12 percent in fiscal years 1992-1993.

**Table 2 -- Selected Outlays by Budget Enforcement Act Categories
(in \$ billions)**

	Domestic Discretionary	Defense Discretionary	Mandatory**
1985	145.4	253.1	436.4
1986	147.4	273.8	448.3
1987	147.0	282.5	460.3
1988	158.2	290.9	482.2
1989	169.0	304.0	507.5
1990	182.5	298.5	546.8
1991*	199.8	307.8	614.4
1992*	212.0	300.4	659.0
1993*	223.2	293.3	702.5

* Estimate under Budget Act assuming discretionary caps.

** Total mandatory spending less deposit insurance outlays.

Source: Office of Management and Budget.

Mandatory outlay growth will also be strong under the budget deal. Taken as a whole, there is no evidence of restraint. The 1991 increase in this category amounts to \$67.6 billion, a rise of 12.4 percent. Less than one year into the budget agreement, intense pressure was rising for expanded outlays in unemployment insurance and for other social spending. A review of the data on domestic discretionary and entitlement spending makes it difficult to avoid the conclusion that Federal spending remains out of control.

The direction of discretionary defense spending under the budget agreement can also be seen in Table 2. The downward trend is clear, even as expressed in nominal terms. While the trend in real defense spending will obviously depend on the future inflation rate, it is evident that defense spending will probably fall at least 3 percent a year in real terms after fiscal 1991. Given recent

international developments and the likely response of Congress to the changed military situation, defense spending will come under even more severe pressure in coming years. Despite an historic opportunity to reduce the burden of taxes and spending on the U.S. economy, Congress seems more disposed to change the composition of this burden than to remove it.

Of course, the Congressional Budget Office (CBO) and Office of Management and Budget, both promoters of the agreement, project declining deficits several years into the future, even as they revise the near-term deficit figures upward. According to the CBO, in the first year of the "deficit reduction" agreement the deficit soared from \$220 billion in 1990 to \$279 billion in 1991. In 1992, the deficit will shoot up again to a level of \$362 billion. Whatever else may be said about the consequences of the 1990 budget "enforcement" act, under its provisions the budget deficit has increased to record levels. In the face of these historically unprecedented deficits, the response of Congress has been to pass measures to increase deficit spending even further.

Of course, the picture is clouded somewhat by outlays to cover deposit insurance obligations. In the near term, outlays for this purpose are substantial, while the presumed sales value of assets in the out-years are projected to reduce the deficit in 1995 and 1996. However, once the fluctuating deposit insurance outlays are excluded, even the rosy CBO budget agreement projections show virtually no change in the deficit between 1991 and 1996, even assuming the so-called deficit reduction provisions remain in place and are not modified or violated. Table 3 below shows that deficits will actually be higher under the agreement than before.

Table 3 -- Deficit Spending Remains High *
(in \$ billions)

	Revenues	Outlays	Deficit
1990	1,031	1,194	162
1991	1,058	1,260	202
1992	1,141	1,389	248
1993	1,223	1,443	220
1994	1,299	1,502	203
1995	1,377	1,566	189
1996	1,449	1,649	200

* assumes discretionary caps and excludes deposit insurance outlays.

Source: CBO.

Despite the claims made for the "deficit reduction" agreement by its proponents, the budget data show that the deficit will soar to a new high in 1992. In retrospect, it appears that the tax increase was large enough not only to stimulate new spending in 1991, but also to encourage

additional domestic spending in future years. This demand for new spending now threatens to unravel even the weak spending constraints established by the budget pact.

Since enactment of the 1990 tax increase there has been a profound change in the substance of congressional debate on fiscal issues. There has been virtually no public discussion of the need for deficit reduction, but instead repeated calls for expanded social spending. To the extent the budget agreement hinders this policy direction, spending advocates have recommended invoking the budget law's emergency provisions, or repealing the spending restraints altogether. Needless to say, the Members of Congress who have urged that the budget deal be junked to accommodate new spending have not called for a rollback of taxes equivalent to those raised last year.

In promoting the alleged success of the "deficit reduction agreement," CBO has claimed that "the longer-run picture has improved."[\[13\]](#) However, even newly available CBO data show that the budget deficit in the long term will grow to a level of \$313 billion by 2001, assuming the spending caps work as intended.

In addition, given the current make up of Congress, there are clear signs that defense spending may not be used in coming years to rebate the peace dividend to the taxpayers or to reduce the deficit, but to finance even more domestic spending.

IV. Explaining the Results: A Cost-Benefit Approach

Spending and tax changes do not occur by chance out of the blue. Governmental decisionmakers are responsible for changes in taxation, spending and, residually, the Federal budget deficit. Although there are many participants in the decisionmaking process, including the President, bureaucrats in the Executive Branch, and possibly even the Federal judiciary, the prime decisionmakers are the Members of Congress who must approve the spending and tax plans of the Nation.

Dwight Lee and Richard Vedder have devised a model which is expositionally useful in explaining the proximate causes of the observed tax-spending relationship noted above.[\[14\]](#) They assume that politicians, like other citizens, try to maximize their "utility" or satisfaction in life. While utility maximization involves behavior that enhances income and power, a prime consideration to lawmakers is job security. Therefore, a given tax or spending change is evaluated in part on its impact on voters and electoral prospects.

It is assumed that increased Federal spending confers what Lee and Vedder term "marginal political benefits" on legislators.[\[15\]](#) While the total benefits increase as spending increases, the extra or marginal benefits from, say, another billion dollars in spending diminishes because of what is often called "the law of diminishing returns" (the first billion dollars in farm subsidies, for example, wins more added votes than the 21st billion dollars in spending).

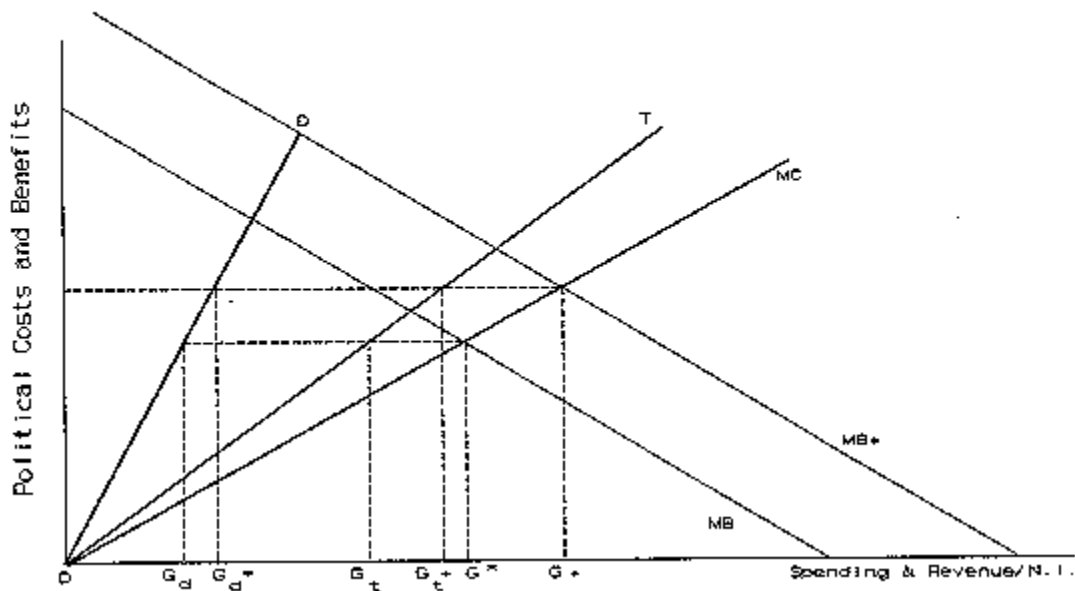
Added spending **must** be financed, however, and taxation and borrowing, the two viable alternatives, both impose political costs on lawmakers. The greater the amount of taxation or

deficit financing, the greater those marginal political costs become. This is often called the "law of increasing costs" by economists.

The Lee-Vedder model is shown in Graph 2. The MB line represents the marginal political benefits of spending, and can be called the "spending demand curve." The D line represents the marginal political costs of deficit spending, while the T line represents the marginal political costs of taxation. The D line lies above the T line since throughout history politicians have mainly resorted to taxation in Federal finance, suggesting the marginal political costs of financing a given level of spending, at least until recent decades, is higher by borrowing than by taxing. The growth of Federal spending to new highs, however, suggests that the optimal tax-deficit mix has moved toward borrowing as resistance to ever higher taxation has intensified.

The D and T lines can be added together horizontally to obtain the total marginal political cost of financing government, which is denoted as the MC (marginal cost) curve, but which can be viewed as the "revenue supply curve," just as its components D and T can be viewed as the "deficit supply curve" and the "tax supply curve" respectively. All the variables in Graph 2 are expressed as a percent of national income (or GNP), to abstract from shifts in the curves reflecting simple growth in income or output over time.

Graph 2 -- Political Equilibrium: Taxes, Spending, and Deficits



The intersection of the political demand curve MB and the revenue supply curve determines the equilibrium or stable level of spending, taxation and deficits. As drawn, total spending will be G^* , deficits will equal G_d , and taxes will equal G_t . At any other combination of taxes and

deficits equal to G^* , politicians can increase their net benefits (utility) by moving to the combination indicated in Graph 2.

Suppose that the marginal political benefits of spending any given proportion of the national income grows over time. The MB curve will move to $MB +$, equilibrium spending will rise to $G +$, deficits will grow to $G_d +$, and taxes will rise to $G_t +$. In other words, an increase in the marginal political benefits from spending Federal funds leads to higher levels of spending, higher levels of taxation, and higher levels of deficits -- exactly the experience of the postwar era.

Thus, if this model approximates reality, the proximate cause of rising levels of spending, taxation and deficits has been the increased political benefits of spending funds. Despite rhetoric about deficit reduction, the propelling factor in fiscal finance has been the growing political gains from spending over time.

By contrast, suppose the D curve had shifted to the left, meaning the marginal political costs of deficit spending had risen. That would lead to a corresponding shift to the left in the MC curve, and a new equilibrium situation where spending and deficits would fall, but taxes would rise. This is the stated objective of the 1990 budget agreement, yet that agreement was not signed in an environment in which the marginal political costs of deficits was rising. Indeed, contemporary history suggests the motivating factor in fiscal changes has come from the changing benefits of spending, not changing sensitivity to budget deficits. Unless the underlying political costs change, agreements such as the 1990 one are not sustainable over any long-run time horizon.

The evidence that defense spending **falls** with tax increases may seem hard to relate to the theoretical approach here, particularly since other forms of spending tend to rise considerably. This would suggest that the marginal political benefits of spending varies significantly with the type of spending. For many constituencies, higher defense spending represents a cost, not a benefit. It probably serves the rhetoric surrounding tax increases (usually couched in deficit reduction terms) to push for real, tangible defense cuts (which are often politically popular), while giving only lip service to politically unpopular (with some interest groups, at least) transfer payment cuts (which are often even explicitly ruled out of discussion in budget negotiations).

V. The State and Local Governmental Experience, 1947-90

While the postwar Federal experience has been characterized by increases in spending, taxation **and deficits**, how does that compare with the experience of state and local governments? Has a dollar in new revenue been associated with more than a dollar in new spending (meaning larger budget deficits), or less than a dollar (meaning smaller budget deficits)?

Using the same simple regression procedures as before, and the same control variables for comparison purposes, we regressed state and local spending against state and local revenues for the calendar years 1947-90.[\[16\]](#) The results are:

$$\begin{aligned}
\text{Spending} &= 17.463 + 0.927 \text{ Tax} - 1.328 \text{ Growth} \\
&\quad (3.126) \quad (182.871) \quad (3.273) \\
&+ 1.697 \text{ War} - 2.053 \text{ Unemployment} \\
&\quad (0.645) \quad (2.259) \\
&+ 0.189 \text{ Inflation}, \bar{R}^2 = .999, D-W = 1.903, \\
&\quad (0.607) \quad R\text{-Statistic} = 8523.35,
\end{aligned}$$

where again numbers in parentheses are t-values.[17]

The results, which are extremely robust statistically, suggest that each \$1.00 in new state and local revenues (primarily taxes) was associated with 93 cents in new state and local spending. Unlike with the Federal government, spending rose less rapidly than tax revenues, and tax increases improved, rather than worsened, the cash position of government.

Why the difference in results between the Federal, state and local governments? While a full discussion of this is beyond the scope of this paper, we would suggest that there are major differences in institutional budgetary constraints.[18] State and local governments, excepting the state of Vermont, are subject to state-balanced budget amendments. While those amendments do not always include all forms of spending (e.g., capital expenditures), they do impose some constitutional constraints on spending. Accordingly, state and local politicians are typically constitutionally mandated to finance new expenditures immediately by spending reductions in other areas or by a tax increase, imposing political costs not generally observed at the Federal level. Other tax or spending limitations (e.g., California's Proposition 13) also exist. In addition, in most states governors possess line-item veto power.

The difference in results are significantly striking to suggest that perhaps the Federal authorities could learn a lesson from the state and local governmental components of the Union. While other differences may exist, the variation in constitutional frameworks is particularly striking and worthy of study.

VI. Other Perspectives on the Issue

One major potential criticism of the analysis above relates to causality. Demonstrating that taxes and spending are positively related does not "prove" that higher taxes "cause" higher spending. It is possible that higher spending induces higher taxes, rather than the other way around.

The theoretical analysis above, however, suggests that the tax-spend relationship's causality really is best evaluated in terms of the underlying motivations for observed changes. The Lee-Vedder theoretical approach is highly consistent both with traditional macroeconomic approaches to human behavior and the empirical evidence. It suggests that taxes and spending **simultaneously** increase because of inexorable pressures on politicians to increase spending that

arise from the political benefits that spending confers. The genesis of the pressures seems to come from what Mancur Olson terms "distributional coalitions" who want funds not to enhance governmental services, but to increase incomes or what is termed by economists as "economic rent." If this view is correct, attempts to reduce the budget deficit will be futile until the "rules of the game" change in a manner that alters the political incentive structure, raising the political costs of deficits, lowering the political benefits of spending, lowering the political costs of taxation, or a combination of the three.

With that very major caveat in mind, it is possible by looking at lagged relationships between taxation and spending to draw inferences about causation. Our own limited efforts in this area, not reported here, are far more consistent with the view that tax changes induce spending changes. Others, however, have observed the opposite.^[19] There has been even a larger body of evidence, however, in support of the view that taxation causes spending changes rather than the other way around, at least at the Federal level.

Manage and Marlow used causality testing of the Granger variety to conclude that taxes promote spending.^[20] Rati Ram, investigating the contradictory Manage-Marlow and Anderson-Wallace-Warner findings, concludes that Manage and Marlow are correct at the Federal level, namely that revenue changes induce expenditure change. ^[21] In this regard, Ram also agrees with the econometric evidence presented by Paul Blackley on the American Federal experience. ^[22] Interestingly recent evidence for Canada supports the hypothesis that causation goes from taxation to expenditures rather than the other way around. ^[23]

Concluding, a majority of the evidence supports the "tax and spend" hypothesis over the "spend and tax" one. Yet we wish to remind the reader that if the political benefits from spending are positive and continue to grow over time, often being greater than the political costs associated with financing that spending, the deficit problem cannot and will not be resolved through tax measures.

VII. Conclusions

Increases in Federal tax revenues continue to be associated with greater increases in Federal expenditures, leading us to conclude that tax increases do not reduce budget deficits. The historical experience under the Gramm-Rudman era (1987-90) was little different than in the decades preceding that experience. The evidence suggests that higher tax revenues are associated with massive increases in income redistribution activity of various forms, especially transfer payments. Indeed, redistributionist activities seem to have crowded out some traditional expenditures of government services, particularly defense.

The cause of the deficit problem does not appear to be inadequate taxes (which now are at a near record level in relation to total output) but rather the political gains from spending, gains that are rising over time, particularly to finance redistributionist activity. Historically, there was a time when tax increases meant deficit reduction, but that time passed in the early part of this century. State and local governments still are able to constrain spending increases to levels equal to or less than the taxes raised. Why? We would tentatively suggest that the answer may lie in different institutional constraints, such as balanced budget amendments, spending limitation

amendments, line-item vetoes, etc., measures that lower the marginal political benefits of new spending to political decisionmakers. In any case, the Federal fiscal problem is not likely to be solved without significant behavioral change on the part of those decisionmakers, and those changes are not likely given the current system of political rewards and costs.

Endnotes

1. Richard Vedder and Lowell Gallaway are both Distinguished Professors of Economics and Faculty Associates of the Contemporary History Institute of Ohio University. Christopher Frenze is a Republican staff economist with the Joint Economic Committee of Congress. The support of the Earhart Foundation for Professor Vedder was instrumental in developing some of the findings.

2. "Federal Tax Increases and the Budget Deficit, 1947-1986: Some Empirical Evidence," **Congressional Record**, April 30, 1987, pp. S 5754-5755.

3. The basic data were mostly taken from the 1991 **Economic Report of the President**, especially p. 381, and from U.S. Bureau of the Census, **The National Income and Product Accounts of the United States, 1929-76** (Washington, D.C.: Government Printing Office, 1981), pp. 122-123.

4. In the actual statistical estimation, both variables were divided by GNP. Estimating absolute dollar amounts would not change the estimated coefficients, although it would impact on the constant term in the regression equation, an irrelevant consideration here. The obtained result is (ignoring an autoregressive adjustment term introduced to deal with serial correlation):

$$\text{Spending} = -9.914 \quad + \quad 1.586 \text{ taxes,} \quad \bar{R}^2 = .601, \\ (2.115) \quad (6.424) \quad D-W = 1.971,$$

where the numbers in parentheses are t-values.

5. We used the growth in real GNP as our measure of growth, and the unemployment rate for civilian workers; both indicators are found in the **1991 Economic Report of the President**.

6. The variable took the value of one for the years 1950-53 and 1965-72, and the value of zero for all other years.

7. The annual CPI value for all urban consumers was used in calculating price changes; in the 1987 study, calculations were based on December-to-December price changes.

8. In 1987, we reported a \$1.58 coefficient on the tax variable. Incorporating some data revisions to some variables, we now obtain a coefficient of \$1.50 using the 1947-86 period, but the reported \$1.59 using the 1947-90 period, suggesting the additional years strengthened the positive tax-spend deficit relationship.

9. *op. cit.*, **Congressional Record**, p. S 5755.

10. *Ibid.*, pg. S 5755.

11. *Ibid.*, pg. S 5755.

12. Floor statement by Representative Paul E. Kanjorski (PA), **Congressional Record**, October 26, 1990, pg. H 13078.
13. "The 1990 Budget Agreement: An Interim Assessment," **CBO Papers**, Congressional Budget Office, December 1990, pg. 5.
14. "Friedman Tax Cuts Vs. Buchanan Deficit Reduction As the Best Way of Constraining Government," unpublished paper (under editorial consideration by a professional economic journal) available from the authors upon request.
15. This assumption is commonly made by many economists, including some Nobel laureates. See, for example, Milton Friedman and Rose Friedman, **Tyranny of the Status Quo** (San Diego: Harcourt Brace Jovanovich, 1983), and James M. Buchanan and Richard E. Wagner, **Democracy in Deficit: The Political Legacy of Lord Keynes** (New York: Academic Press, 1977).
16. The basic data are found in the 1991 **Economic Report of the President**, p. 382.
17. The tax and spending variables were not related to GNP as in the federal tax-spend equation, a factor that has no impact on any of the results except regarding the constant term.
18. Rati Ram has observed interesting international differences in the tax and spend relationship. See his, "A Multicountry Perspective on Causality Between Government Revenue and Government Expenditure," **Public Finance**, 1988, No. 2, pp. 261-270.
19. George von Furstenberg, Jeffrey Green, and Jin-Ho Jeong, "Tax and Spend, or Spend and Tax?" **Review of Economics and Statistics**, May 1986, pp. 179-188, and William Anderson, Myles Wallace and John Warner, "Government Spending and Taxation: What Causes What?" **Southern Economic Journal**, January 1986, pp. 630-639.
20. Manage, Neela and Michael L. Marlow, "The Causal Relation Between Federal Expenditures and Receipts," **Southern Economic Journal**, January 1986, pp. 616-629.
21. "Additional Evidence on Causality Between Government Revenue and Government Expenditure," **Southern Economic Journal**, January 1988, pp. 763-769.
22. Blackley, Paul R., "Causality Between Revenues and Expenditures and the Size of the Federal Budget," **Public Finance Quarterly**, April 1986, 139-156.
23. Ahiakpor, James C.W. and Saleh Amirkhalkhali "On the Difficulty of Eliminating deficits with Higher Taxes: Some Canadian Evidence," **Southern Economic Journal**, July 1989, pp. 24-31.