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FLAT-RATE TAX PROPOSALS
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In recent months there has been a growing congressional interest in the advantages and disadvantages of revamping our current tax system for a flat-rate tax method.

Supporters of the new proposal argue that such a plan would promote productivity, simplify present IRS tax forms, save the public billions of dollars that presently go to tax-preparation professionals, and enhance Federal revenue by closing numerous tax loopholes and special deductions that are now enjoyed by relatively few.

Opponents believe, however, that the tax burden under a flat-rate plan might fall more heavily upon the middle class and, unless exceptions were made, would hurt educational institutions and charities. Problems with popular tax deductions, such as home mortgage interest, would have to be addressed.

This packet provides background materials which discuss the practical and theoretical issues that surround a flat-rate tax, including the probable redistribution of the tax burden under various rates and income bases.

Additional information on this subject, primarily in periodicals and newspapers, may be found in a local library through the use of indexes such as the Readers' Guide to Periodical Literature, the Public Affairs Information Service Bulletin (PAIS), and the New York Times Index. Congressional Quarterly Weekly Report and the Commerce Clearing House Congressional Index are commercial publications which track the status of current legislation and are available in larger libraries.

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AN OVERVIEW OF THE ISSUES CONCERNING A FLAT-RATE INCOME TAX

by Gregg A. Esenwein

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INTRODUCTION

The idea of a flat-rate or proportional income tax has generated considerable legislative and popular interest in recent months.¹ Many individuals, including some prominent tax experts, believe that the current income tax system has become a burden on the economy. They consider it to be far too complex, to provide too many tax breaks for upper income individuals and to promote economic inefficiencies. They see a flat-rate tax, on the other hand, as the antithesis of the current system, embodying the principles of simplicity, efficiency and fairness.

Much of the criticism of the current income tax system has some justification. It has become an extremely complex and unwieldy system. It may seem that over the years the main rationale for the income tax—to collect the revenue needed to operate the federal government—has been obscured in the pursuit of secondary goals.

However, most of the complexity of the current income tax system is a result of the desire to promote specific social goals which have broad-based constituencies supporting them. To give just two examples consider the cases of the deductibility of mortgage interest payments and charitable contributions. In each case the current income tax promotes what is widely viewed as socially acceptable and desirable goals, making home ownership more affordable to a majority of the populace and promoting charitable contributions.

Additionally, the current income tax structure reflects attempts to achieve what is perceived as an equitable distribution of the tax burden. Although these attempts have produced some inefficiencies in the economy, the benefits must also be taken into account. It should be kept

in mind that adoption of a flat-rate income tax would in all probability entail a major redistribution of the tax burden.

To simplify the current income tax system, any proposal for a flat-rate tax would have to address these and many other similar issues. Given the difficult choices involved in adopting a flat-rate tax, the purpose of this report is threefold. First, the practical considerations of defining the appropriate taxable income base for a flat-rate tax are analyzed. A discussion of the probable redistribution of the tax burden under each alternative income base is included. Second, the practical and theoretical issues surrounding a flat-rate tax are analyzed. Questions of behavioral responses, economic efficiency and equity are addressed. Third, an overview of recent legislative initiatives in the area of flat-rate income taxes is presented in an appendix.

I. ALTERNATIVE INCOME BASES FOR A FLAT-RATE INCOME TAX

The definition of the appropriate income base represents one of the more difficult issues faced by proponents of a flat-rate income tax. The flat tax rate needed to generate the required revenue will vary with the tax base used. The broader the tax base, the lower the necessary flat tax rate. There are three basic ways that a flat-rate income tax could be applied. It could be applied to the current law base of taxable income, adjusted gross income, or some expanded income concept. Each of the three income bases for a flat-rate income tax possess certain benefits and drawbacks.

Regardless of the income base used, the transition to a flat-rate income tax would affect the distribution of the tax burden. The precise change in the distribution of the tax burden would depend on the income base which is used. However, unless some form of low to middle income relief were included (say an exemption of a portion of income or a tax credit) a flat-rate income tax would produce a tax burden which would fall more heavily on lower to middle income taxpayers than the present tax system.

It should be kept in mind that adoption of a flat-rate income tax would in all probability entail a major redistribution of the tax burden.

¹The concept of a flat-rate income tax has been periodically discussed as an alternative to the current tax system. For an example of an earlier review of the debate see U.S. Library of Congress, Congressional Research Service, *Progressivity in Income Taxation: A Pro-Con Discussion*. By Robert Tannenwald, Dec. 1976.

A. Taxable Income

The drawbacks to using taxable income as defined in current law as the income base for a flat-rate tax are substantial. First, with taxable income as a base, the complexity of the current income tax system would be maintained. Itemized deductions and the treatment of investment income account for a substantial portion of the complexity of the current income tax system. If taxable income were used as the base, there would be little reduction in the complexity of the income tax system, since both of these items would be retained.

Over the years the main rationale for the income tax—to collect the revenue needed to operate the federal government—has been obscured in the pursuit of secondary goals.

Second, taxable income is the narrowest of the potential tax bases. As a result, the flat-rate tax which would have to be applied to taxable income to raise the required revenues would be quite high. This high flat tax rate would produce two results.

One, it would cause a substantial shift in the tax burden. Low to middle income households would experience major increases in both their effective and marginal income tax rates. Only the upper income households would experience reductions in their effective and marginal tax rates. Two, since the flat tax rate would be quite high, the benefits in terms of increased economic efficiency would be small. Only a small percentage of households would experience reductions in their marginal tax rates and these reductions would have a negligible effect on resource allocation.

The only benefit to using taxable income as defined in current law as the tax base is that it would avoid the dislocations that would occur if the current deductions and preferential tax treatment of certain income were curtailed.

B. Adjusted Gross Income

Adjusted gross income (AGI) would be a somewhat broader income base than taxable income. AGI is usually less than money income, because certain types of income are excluded in calculating AGI. For example, social security, railroad retirement, unemployment compensation and 60 percent of capital gains income are excludable from gross income. Additionally, certain other items such as contributions to individual retirement accounts can be excluded from AGI. AGI, while not as broad a tax base as a comprehensive income concept, would be a much broader tax base than taxable income (which allows exemptions and deductions from income).

AGI would allow use of a lower flat tax rate to raise the required level of revenues. However, there are still considerable drawbacks to using AGI as the income base.

First, the required flat-tax rate would probably still be higher than the tax rate faced by most low-middle income households under the current tax system. As a result, the distribution of the tax burden would shift toward the low to middle income groups. Second, the removal of itemized deductions would produce serious financial ramifications

for middle income households. The economic behavior of these households has been heavily influenced by the deductibility of certain expenses such as interest on home mortgages and interest on consumer credit. Eliminating the deductibility of these items would severely penalize these households for past behavior. Finally, although the tax code would be somewhat simplified with the removal of itemized deductions, many sources of complexity in the tax code, such as the preferential treatment of long-term capital gains and the depreciation allowances, would remain intact.

C. Comprehensive Income

Another, still broader tax base would be provided by comprehensive income. Although there are alternative definitions as to the specific items which can be included in a comprehensive income base, under most definitions comprehensive income would represent a quite broad tax base.² For example, a comprehensive income base could include wage income, social security and pension benefits, all realized net capital gains, dividends, property income, and imputed corporate retained earnings.

In the case of a comprehensive income base, the flat-tax rate required to raise the appropriate level of revenue would be substantially lower than the comparable rates under a taxable income or adjusted gross income base. However, many of the same problems would remain, such as the probable shift in the distribution of the tax burden toward the lower and middle income taxpayers and the dislocations and distortions resulting from the exclusion of previously deductible items.

II. OVERVIEW OF PRACTICAL AND THEORETICAL CONSIDERATIONS

In addition to the technical issues of instituting a flat-rate tax, there are several practical and theoretical considerations which are important. For example, in terms of practical considerations it is of interest to know whether a flat-rate income tax is sensitive to inflation and how it affects the marriage penalty. In terms of theoretical considerations, it is important to understand how a flat-rate income tax would affect horizontal and vertical equity, economic efficiency and individual behavior. This section presents an overview of these issues.

A. Simplicity

Probably the most commonly heard critique of the current income tax system is that its complexity promotes both administrative and economic inefficiencies. There are two basic issues involved; one, the administrative and compliance costs associated with the current income tax system and two, the economic costs.

Administration and compliance with the current income tax code are costly and time consuming. Due to its complexity, a myriad of specialists have evolved whose primary function is to sort through and interpret provisions of the tax code. In lieu of contributing to the economy in a productive manner, these specialists spend their time developing methods to minimize the impact of the current tax code. These efforts represent a resource drain on the economy.

²For a detailed analysis of the components of a comprehensive income base see Dept. of the Treasury, Blueprints for Basic Tax Reform, Jan. 1977.

As a corollary, the massive amount of regulations which accompany the current income tax code promotes inefficiencies in the compliance and collection of taxes. The average taxpayer is confronted with a multitude of forms and procedures when filing his income tax. As a result, due to either outright avoidance or lack of full information, compliance with the tax regulations for a full reporting of income has declined over the years. This has produced a significant loss of revenue for the federal government.³

In addition to the compliance and administrative costs, there are also economic costs associated with the current progressive tax system. Under the current tax system there are incentives to artificially shelter income from taxation at high marginal tax rates. These shelters take one of two basic forms. First, investors time the realization of their gains to coincide with periods when they are in low marginal tax brackets. Second, investments are made in instruments which receive preferential tax treatment. Both of these factors distort the efficient allocation of resources.

Proponents contend that these excess administrative and economic costs could be eliminated by broadening the income base under a flat-rate income tax. Since a flat-rate income tax would be extremely simple compared to the current system, there would be a dramatic decrease in the amount of resources needed to administer and interpret the tax code. Additionally, the simplicity of a flat rate income tax would promote better compliance and hence help prevent the loss of tax revenues. It should be noted, however, that by broadening the income base, much of the decrease in complexity could be achieved under the current income tax system.

Proponents also argue that a flat-rate tax would remove most of the incentives to shelter income artificially. Since most taxpayers would face the same low marginal tax rates, there would be no tax advantage from timing the realization of economic gains. Finally, under most proposals for a flat-rate income tax, similar activities would be taxed at similar rates. As a result, investment would flow into those vehicles which offer the highest pretax return promoting the efficient allocation of resources.

B. Inflation Sensitivity

Under the current progressive income tax system, inflation-induced increases in income push individuals into higher marginal income tax brackets. For most individuals, the increase in income tax liability is proportionately greater than the inflation-induced increase in income. As a result of the combination of a progressive income tax and inflation-induced increases in income, most taxpayers experience a reduction in their real after-tax purchasing power.

Under provisions contained in the Economic Recovery Tax Act of 1981 the problem of bracket creep would be resolved by indexing the rate structures, zero bracket amount and personal exemptions beginning in 1985. However, a flat-rate income tax would also eliminate inflation-induced bracket creep. With only one marginal tax rate, inflation-induced increases in income would not push taxpayers into higher tax brackets and would have relatively little effect on their average or effective income tax rates. Under a flat-rate tax, taxpayers would experience little change in their real after-tax purchasing power as a result of inflation.

³For a background discussion of this issue see: Molefsky, America's Underground Economy, CRS Report 81-181E.

C. Marriage Penalty

Under the current income tax system two income earning individuals who file a joint return in all probability pay more in income taxes than they would if they were to file separate returns as singles. This is commonly referred to as the marriage penalty tax. It is the result of the different marginal tax rate schedules for joint and single returns. Provisions contained in the Economic Recovery Tax Act of 1981 attempt to correct this inequity by allowing the lower income earning spouse to deduct a percentage of his or her income from taxation. However, in many instances the penalty is only partially offset, while in others the provisions create a marriage bonus.

The problem of a marriage penalty or marriage bonus would be eliminated under a flat-rate income tax. Applying the same flat tax rate to both joint and single returns would eliminate the source of the penalty: marginal tax rate schedules based on filing status.

D. Horizontal Equity

If a tax system taxes individuals in similar positions equally, then the tax system possesses horizontal equity. Under the current income tax system, the principle of horizontal equity is violated, since individuals in similar circumstances are taxed at different rates. For example, consider the case of an individual with \$10,000 of wage income and another individual with \$10,000 of capital gains income. Under the current income tax system, the individual with only wage income would pay a substantially higher tax than the individual with capital gains income (capital gains income receives preferential treatment under current tax law).

Horizontal equity is a function of how comprehensively income is defined for tax purposes; it is not a function of the type of tax rates that are applied to taxable income.

Most proposals for a flat-rate tax system include provisions which would broaden the income base and end the preferential treatment of certain types of income. Under this type of flat-rate tax horizontal equity would improve. However, the same degree of horizontal equity could be achieved under the current income tax system if the income base were broadened and the preferential tax treatment of certain types of income were curtailed. Horizontal equity is a function of how comprehensively income is defined for tax purposes; it is not a function of the type of tax rates that are applied to taxable income.

E. Vertical Equity

Vertical equity concerns the incidence of a tax among people with unequal incomes. The standard interpretation of vertical equity has been that tax burdens should be distributed according to taxpayer's ability to pay. In other words, an individual with a larger income should pay proportionately more of his income in taxes than an individual with a smaller income. With respect to income taxation, this concept of vertical equity is the rationale for progressive tax rates.

Most empirical studies of vertical equity conclude that, taken in isolation, the current income tax system ranges from slightly to highly progressive. However, when other taxes are included, it appears the overall tax burden (federal, state, and local) is roughly proportional.⁴ Adopting a flat-rate tax does not necessarily entail the loss of all progressivity. If a flat-rate tax exempted a fixed dollar amount of income from taxation then it would be a moderately progressive system. For example, consider a flat-rate tax of 10 percent which exempts the first \$5,000 of income from taxation. An individual with \$10,000 income would pay \$500 or 5 percent of his income in taxes. An individual with a \$20,000 income would pay \$1,500 or 7.5 percent of his income in taxes. Hence, a flat-rate tax coupled with an income exemption is not incompatible with the concept of progressivity. However, regardless of the particular provisions for exemptions, adoption of a flat-rate tax would in all probability reduce progressivity when compared to the current income tax system and hence could result in an overall tax burden that is regressive.

Adopting a flat-rate tax does not necessarily entail the loss of all progressivity.

It should be noted, however, that the principle of vertical equity is a highly subjective concept because it is based on the assumption of declining marginal utility of income. That is, a dollar of income is considered to be more valuable to a lower income individual (who is more likely to spend it on necessities) than it is to an upper income individual (who is more likely to spend it on non-necessities). A number of tax experts and laymen contend that the concept of declining marginal utility of income is much too subjective and arbitrary to serve as the basis for determining the structure of the tax system.

F. Economic Efficiency

The economic efficiency or inefficiency of a tax system can be judged by its effects on relative prices. If the tax system distorts relative prices it is inefficient, since this distortion prevents the efficient allocation of resources. An income tax, regardless of whether it is progressive or proportional, distorts relative prices and affects economic choices such as the choice between income and leisure and the choice between present and future consumption. For example, in the presence of an income tax, the price of leisure is reduced relative to an individual's wage income. That is, to acquire an extra hour of leisure an individual would need only give up something less (depending on his marginal tax rate) than an hour's worth of wages.

Since all income taxes are inherently inefficient, the goal is to design a tax which minimizes distortions in relative prices. It is often argued that a flat rate income tax is more efficient than a progressive income tax, since it would minimize relative price distortions. However, in the transition from the current progressive tax system to a flat rate tax some individuals would experience increases in

their marginal tax rates while others would experience decreases in their marginal tax rates.

Unless some form of low to middle income relief were included...a flat-rate income tax would produce a tax burden which would fall more heavily on lower to middle income taxpayers than the present tax system.

Taxpayers whose marginal tax rates decrease would experience a reduction in the distortion between the price of income versus leisure. This would tend to reduce the inefficiency of the tax system. On the other hand, taxpayers whose marginal tax rates increase would experience an increase in the distortion between the price of income versus leisure, which, in turn, would increase the inefficiency of the tax system. Because of these offsetting effects it is not clear whether a flat-rate tax would increase the overall economic efficiency of the tax system.

Proponents of a flat-rate tax also contend that in response to reductions in marginal tax rates, individuals will tend to increase their work efforts. That is, since the price of leisure will rise relative to the price of income, individuals will substitute income for leisure. However, as pointed out earlier, under a flat-rate tax, some individuals would experience reductions while others would experience increases in their marginal tax rates. Therefore, while some individuals might substitute income for leisure (since the price of leisure will rise relative to the price of income) others might substitute leisure for income (since the price of leisure will fall relative to the price of income). For this reason, the effects of a flat-rate tax on the aggregate work level are uncertain.

The effects of a flat-rate tax on the aggregate work level are uncertain.

An additional factor to consider when discussing behavioral responses is the income effects of a change in relative prices. As opposed to the substitution effect, which depends on the change in the marginal rate of tax, the income effect is a function of the change in the average rate of tax. If a reduction in an individual's marginal tax rate coincides with a reduction in his average tax rate, then the substitution effect might be offset by the income effect. In this case, the individual's income will increase (due to the reduction in his average tax rate) and he will be able to consume more of everything, including leisure. Most empirical studies indicate that the substitution and income effects of a reduction in marginal and average tax rates tend to cancel each other producing little or no effect on work effort.⁵

⁴See Pechman and Okner, *Who Bears the Tax Burden?* Brookings Institution, 1974.

⁵See Dept. of Treasury, *Can Tax Revenues Go Up When Tax Rates Go Down?*, by Don Fullerton, OTA Paper 41, Sept. 1980.

APPENDIX

Legislative Initiatives

Nine bills have been introduced (six in the House and three in the Senate) all of which address the issue of a flat rate income tax or an expanded income base. A brief synopsis of the pertinent aspects of each of these bills follows.⁶

H.R. 3181. (Introduced: April 9, 1981; Sponsors: Rep. Leon E. Panetta, D-Calif., et al.) *Synopsis:* Repeals all itemized deductions for individuals except deductions relating to the production of income or alimony or support payments. Substitutes an income tax credit for the personal exemption. Abolishes the tax schedule for heads of households.

H.R. 4821. (Introduced: October 22, 1981; Sponsor: Rep. George Hansen, R-Idaho.) *Synopsis:*

- Amends the Internal Revenue Code to repeal the income tax tables. Provides for an income tax rate of 14 percent for all individuals, estates, and trusts.
- Redefines "adjusted gross income" to eliminate the deductions from gross income for the following: (1) long-term capital gains; (2) moving expenses; (3) retirement savings; and (4) repayments of supplemental unemployment compensation benefits.
- Defines "allowable itemized deductions" as any deduction attributable to: (1) expenses for the production of income; (2) contributions to a church or convention or association of churches; (3) medical and dental expenses; and (4) alimony or separate maintenance payments.
- Repeals the deductions for: (1) interest, taxes, and depreciation of cooperative housing; (2) moving expenses; (3) retirement savings; (4) abortion expenses; and (5) long-term capital gains.

H.R. 5513. (Introduced: February 10, 1982; Sponsor: Rep. Philip M. Crane, R-Ill.) *Synopsis:*

- Amends the Internal Revenue Code to repeal the income tax

tables. Provides for an income tax rate of 10 percent for all individuals, estates, and trusts.

- Repeals all special tax deductions, credits, and exclusions from incomes for individuals. Amends the Economic Recovery Tax Act of 1981 to increase to \$2,000 the deduction for personal exemptions.

S. 2147. (Introduced: March 1, 1982; Sponsor: Sen. Dennis DeConcini, R-Ariz.) *Synopsis:*

- Requires that the Internal Revenue Code be amended to provide that after 1985, all income should be taxed at a rate of 20 percent or less.
- Sets forth guidelines for a new income tax scheme. Requires the Secretary of the Treasury to propose legislation to implement this Act.

S. 2200. (Introduced: March 15, 1982; Sponsor: Sen. Jesse Helms, R-N.C.) *Synopsis:* Companion bill to H.R. 5513.

H.R. 5868. (Introduced: March 17, 1982; Sponsor: Rep. Kent Hance, D-Tex.) *Synopsis:* Directs the Secretary of the Treasury or his delegate to conduct a study of the advisability of replacing the current federal income tax system for individuals and corporations with a system under which income tax is imposed on gross income.

H.R. 6070. (Introduced: April 5, 1982; Sponsor: Rep. Leon E. Panetta, D-Calif. et al.) *Synopsis:* Eliminates most deductions, credits and exclusions. Establishes a 19 percent tax on gross income, less basic business expenses. Establishes tax credits of \$1,000 for an individual, \$1,000 for a spouse, \$200 per dependent, and \$200 for individuals who are blind or over 65.

S. 2376. (Introduced: April 15, 1982; Sponsor: Sen. Charles E. Grassley, R-Iowa.) *Synopsis:* Directs the Treasury Department to study the feasibility of replacing the current income tax for individuals and corporations with a flat-rate tax on various income bases.

H.R. 6352. (Introduced: May 11, 1982; Sponsor: Rep. Ron Paul, R-Tex.) *Synopsis:*

- Amends the Internal Revenue Code to provide that a 10 percent income tax rate shall apply to all individuals.
- Repeals all deductions, credits, and exclusions for individuals other than an exemption of \$10,000.

⁶The abstracts of these bills were prepared by the Bill Digest unit of the American Law Division of the Congressional Research Service.





ESTIMATES OF FLAT INCOME TAX RATES USING VARIOUS TAX BASES

by Louis Alan Talley¹

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The concept of a flat-rate, or proportional, income tax has long held wide attraction because of its simplicity and its underpinnings with regard to tax equity. Proposals for the institution of a flat-rate federal income tax are advanced perennially, and the potential revenue implications of the proposals are among the foremost issues debated. A resolution, directing the Treasury Department to complete a study on the feasibility of replacing the current tax system with a flat percentage rate of tax on all forms of personal and corporate income, was introduced by a bipartisan group of House Ways and Means Committee members. The resolution calls for the study to assume that economically disadvantaged families would be exempt, paperwork reduced, and economic disincentives removed by the new tax system. Additionally, strengths and weaknesses are to be identified with possible solutions. The study would be in two parts; the first would look at only replacing the current personal income tax while the second would focus on replacing both business and personal income taxes.²

The chief purpose of any tax system, proportional or progressive, is to raise the revenue needed for the operations of government. This report examines the flat tax rates necessary to generate the 1980 level of federal individual income tax revenues, under various income tax bases.³ It is intended as a companion piece to the CRS reports, *Progressivity in Income Taxation: A Pro-Con Discussion* (December 28, 1976) by Robert Tannenwald, and *An Overview of the Issues Concerning a Flat-Rate Income Tax* (May 26, 1982) by Gregg A. Esenwein.

The rate of tax necessary to generate a level of revenue equal to that generated by current law will vary according to the income tax base with which it is used; the broader the tax base, the lower the necessary income tax rate. Therefore, proposals for the institution of a flat-rate federal individual income tax often have as corollaries the broadening of the tax base.⁴ The broadening of the tax base would entail the reduction of or the outright elimination of various tax exemptions, deductions, exclusions, and preferences which the tax code now includes. (Some proposals also call for the imputation of net undistributed corporate income to shareholders and the elimination of the corporate income tax.) This report examines the flat tax rates necessary to raise 1980 levels of individual income tax revenues given various income tax bases, which range from the narrow (taxable income) to the quite broad (comprehensive income).

Besides the simple revenue effects the institution of a flat-rate tax would bring about, a switch to a proportional income tax could entail distributional effects. These effects would be changes in how the aggregate tax burden is distributed over income classes. For example, one would expect to find that a greater percentage of the overall tax burden would fall on lower income classes under a proportional tax than under a progressive tax rate system. The precise change in the distribution of the tax burden over income classes would depend partly upon the income tax base which is used. A truly comprehensive tax base with no exemptions whatsoever coupled with a flat-rate income tax would result in a tax burden which falls

⁴Interested readers should see: U.S. Treasury Department, *Blueprints for Basic Tax Reform*, Washington, U.S. Govt. Print. Off., January 17, 1977; and: Pechman, Joseph, ed. *Comprehensive Income Taxation*, Brookings Institution, Washington, D.C., 1977. Also of interest is: Brazer, Harvey E. "The Income Tax in the Federal Revenue System," in Musgrave, Richard A., ed. *Broad-based Taxes, New Options and Sources*.

¹This paper is based on an earlier report: U.S. Library of Congress, Congressional Research Service, *Estimates of Flat Income Tax Rates Necessary to Raise 1976 Level of Federal Income Tax Revenues, Using Various Tax Bases*, by John Karr, June 21, 1978.

²Tax Legislation: Tax Writers Introduce Resolution on Gross Income Tax Study. *Daily Tax Report*, The Bureau of National Affairs, Inc. March 17, 1982, No. 52, p. G5 and G6.

³Statistics for 1980 are the most recent available which provide information by size of adjusted gross income.

The flat-rate taxes necessary . . . to generate the 1980 level of . . . revenues are: system one, 11.8 percent; system two, 18.5 percent; system three, 15.7 percent; and system four, 18.7 percent.

more heavily on lower income classes than the same tax rate on a less comprehensive tax base. However, the intent behind the institution of a flat-rate tax may be in fact to avoid the "progressive" distribution of the tax burden over income classes (i.e., a tax burden which falls more heavily on upper-income taxpayers than on lower-income taxpayers).

Table 1 below presents actual 1980 levels of adjusted gross income (AGI), taxable income (TI), and federal individual income tax liability by category of AGI. From the table, the tax rate necessary to generate equivalent revenues according to the tax base used can be deter-

mined. The revenue a flat-rate tax must generate to provide an amount equal to total federal individual income tax collections (at 1980 levels) is about \$248.4 billion.

The first income base measure examined is taxable income (TI). TI is the most narrowly defined income tax base, consisting of gross income after exclusions, adjustments, exemptions, and deductions.⁵ The use of TI as a tax

⁵Definitions of these terms can be found in: U.S. Library of Congress. Congressional Research Service. *An Explanation of Federal Individual Income Tax Terms*, by Morgan Frankel and Louis Talley. May 17, 1980. (Report No. 80-98 E).

Table 1
FEDERAL INDIVIDUAL INCOME TAX LIABILITIES, 1980

Adjusted Gross Income	Total AGI (thousands)	Total Taxable Income (thousands)	Total Income Tax (thousands)	Percent of Total Tax	Cumulative Percent
\$ 1—\$4,999	\$ 38,907,194	\$ 26,042,856	\$ 620,397	0.3	0.3
5,000— 9,999	136,656,653	97,138,635	7,821,580	3.2	3.5
10,000—19,999	369,991,037	293,346,121	39,791,219	16.0	19.5
20,000—29,999	390,438,849	314,863,747	53,320,188	21.5	41.0
30,000—49,999	405,720,568	328,697,987	69,641,127	28.0	69.0
50,000 and over	264,551,386	213,468,658	77,206,090	31.1	100.1
Total ^a	\$1,606,265,685	\$1,273,558,004	\$248,400,602	100.1	100.1

^aNot equal to 100.0 percent due to rounding.

Source: U.S. Internal Revenue Service. Statistics of Income Bulletin, winter 1981-82. Washington, D.C., 1982.

Table 2
**ESTIMATED TAX REVENUE GENERATED BY A FLAT-RATE 19.5 PERCENT
TAX ON TAXABLE INCOME AT 1980 LEVELS**

Adjusted Gross Income	Total Taxable Income (thousands)	Estimated Tax Revenues (thousands)	Percent of Total	Cumulative Percent
\$ 1—\$4,999	\$ 26,042,856	\$ 5,078,357	2.0	2.0
5,000— 9,999	97,138,635	18,942,034	7.6	9.6
10,000—19,999	293,346,121	57,202,494	23.0	32.6
20,000—29,999	314,863,747	61,398,431	24.7	57.3
30,000—49,999	328,697,987	64,096,107	25.8	83.1
50,000 and over	213,468,658	41,626,388	16.8	99.9
Total ^a	\$1,273,558,004	\$248,343,811	99.0	99.9

^aNot equal to 100.0 percent due to rounding.

Source: Author's calculations based on IRS data.

Table 3
**ESTIMATED TAX REVENUE GENERATED BY A FLAT-RATE 15.5 PERCENT
TAX ON ADJUSTED GROSS INCOME AT 1980 LEVELS**

Adjusted Gross Income	Total AGI (thousands)	Estimated Tax Revenues (thousands)	Percent of Total	Cumulative Percent
\$ 1—\$4,999	\$ 38,907,194	\$ 6,030,615	2.4	2.4
5,000— 9,999	136,656,653	21,181,781	8.5	10.9
10,000—19,999	369,991,037	57,348,610	23.0	33.9
20,000—29,999	390,438,849	60,518,021	24.3	58.2
30,000—49,999	405,720,568	62,886,688	25.3	83.5
50,000 and over	264,551,386	41,005,465	16.5	100.0
Total ^a	\$1,606,265,685	\$248,971,180	100.0	100.0

^aNot equal to 100.0 percent due to rounding.

Source: Author's calculations based on IRS data.

base would not provide much simplicity due to the many rules regarding allowable deductions, limits on adjustments, etc. TI for 1980 totaled about \$1,273.6 billion. In order to generate income tax collections of approximately \$248.4 billion, a tax rate of roughly 19.5 percent would have to be applied. Table 2 presents estimates of the tax revenues that would be collected in each category of AGI under a 19.5 percent tax on TI (at 1980 levels).

Adjusted gross income (AGI) would be a somewhat broader income base. AGI is usually less than money income because certain types of income are excluded in calculating AGI. For example, social security, railroad retirement, and unemployment compensation are excludable from gross income. Additionally, certain other items, such as contributions to individual retirement accounts, can be excluded from AGI. AGI, while not as broad a tax

Table 4
DISTRIBUTION OF TAX LIABILITIES UNDER FOUR ALTERNATIVE FLAT-RATE TAX SYSTEMS COMPARED TO 1984 TAX LAW¹ AT 1981 INCOME LEVELS

Present Law			System 1			System 2		
Expanded Income (thousands)	Number of Taxable Returns (thousands)	Tax Liability 1984 Law (millions)	Tax Liability (millions)	Change (Percent)	Change (Dollars Per Return)	Tax Liability (millions)	Change (Percent)	Change (Dollars Per Return)
< 5 ²	6,482	403	5,479	1,259.5	783.07	1,574	290.7	180.71
5- 10	15,057	5,772	14,280	147.4	565.04	8,752	51.6	197.91
10- 15	13,092	12,526	19,700	57.3	547.99	17,610	40.6	388.31
15- 20	10,737	17,462	22,496	28.8	468.88	22,665	30.0	484.54
20- 30	16,800	44,080	49,701	12.8	334.58	52,871	19.9	523.28
30- 50	13,568	63,833	60,579	-5.1	-239.82	66,419	4.1	190.61
50-100	3,580	38,687	27,389	-29.2	-3,155.74	30,486	-21.2	-2,290.90
100-200	631	18,656	9,872	-47.1	-13,920.58	10,743	-42.4	-16,540.20
> 200	164	16,385	7,675	-53.2	-53,107.15	7,129	-56.5	-56,438.05
Total	80,110	217,803	217,172	-0.3	-7.87	218,249	0.2	5.57

Present Law			System 3			System 4		
Expanded Income (thousands)	Number of Taxable Returns (thousands)	Tax Liability 1984 Law (millions)	Tax Liability (millions)	Change (Percent)	Change (Dollars Per Return)	Tax Liability (millions)	Change (Percent)	Change (Dollars Per Return)
< 5 ²	6,482	403	2,232	453.7	282.10	1,996	395.2	245.71
5- 10	15,057	5,772	7,854	36.1	138.26	5,345	-7.4	-28.33
10- 15	13,092	12,526	15,720	25.5	243.97	12,698	1.4	13.11
15- 20	10,737	17,462	20,778	19.0	308.88	18,802	7.7	124.76
20- 30	16,800	44,080	49,978	13.4	351.06	48,170	9.3	243.45
30- 50	13,568	63,833	66,466	4.1	194.08	68,804	7.8	366.41
50-100	3,580	38,687	32,658	-15.6	-1,684.20	36,104	-6.7	-721.60
100-200	631	18,656	12,459	-33.2	-9,821.59	14,344	-23.1	-6,833.56
> 200	164	16,385	10,050	-38.7	-38,630.67	11,843	-27.7	-27,692.33
Total	80,110	217,803	218,194	0.2	4.88	218,106	0.1	3.78

SOURCE: Joint Committee on Taxation.

¹To facilitate comparison, 1984 law does not include the earned income credit, the two-earner couple deduction, or the IRA or Keogh provision. The flat rate tax systems similarly do not include those provisions.

²Outcomes under the flat-rate tax for tax returns of under \$5,000 of income would be highly uncertain. Some taxpayers at that income level currently make use of tax preferences that would be terminated under the flat-rate tax, and those taxpayers would thus face substantial tax increases. A particular problem would arise under System 1, in which all income would be subject to tax without exemption or deduction; many households with very low incomes who are excused from filing tax returns under the 1984 law are therefore not represented in the table, but would have to file returns and pay taxes under System 1. The impact of

this factor on the table would likely be small, though it would significantly change administrative burdens under the tax system.

System 1: 11.8 percent tax on adjusted gross income with long-term capital gains included in full.

System 2: 18.5 percent tax on 1984 law taxable income less zero bracket amount.

System 3: 15.7 percent tax on 1984 law taxable income less zero bracket amount, with long-term capital gains included in full, and no itemized deductions.

System 4: 18.7 percent tax on taxable income as in system 3 with increased exemption and zero bracket amount.

base as personal income or comprehensive income, would be a much broader tax base than taxable income (which includes exemptions and deductions from income). Table 3 presents the estimated revenue which would be generated by a 15.5 percent tax on AGI, with no other exclusions or exemptions.

Another possible income base would be personal, or money income. Because money income includes items such as retirement benefits received, the sum of all dividends received, as well as wage and salary income, it would be a broader tax base than AGI. Total 1980 money income received by families and unrelated individuals totaled roughly \$1,739.0 billion, as reported by the Census Bureau.⁶ In order to generate \$248.4 billion in tax revenues, a tax rate of 14.3 percent would have to be applied to the \$1,739.0 figure, with no exemptions or exclusions.

Another, still broader tax base would be that provided by comprehensive income. Although there are alternative definitions as to the specific items which can be included in a comprehensive income base, under most definitions comprehensive income would represent a quite broad tax base. For example, in the Treasury study, *Blueprints for Basic Tax Reform* (Blueprints study), a comprehensive income definition was developed which includes not only net money wage income, but also social security and pension benefits received, all realized non-corporate capital gains, dividends, and property income, and imputed corporate retained earnings.⁷

This report examines the flat tax rates necessary to raise 1980 levels of individual income tax revenues given various income tax bases, which range from the narrow . . . to the quite broad . . .

The foregoing analysis has presumed the institution of a flat-rate tax on income, under various income definitions. It would be possible to design a simple, yet more progressive, income tax based on a broad tax base by adjusting tax rates or including personal exemptions. However, by including exemptions or exclusions from income the income tax base is narrowed, thus requiring higher tax rates in order to generate a prescribed amount of revenue. The Blueprints study as well as the Brookings study edited by Pechman, *Comprehensive Income Taxation*, presented examples of simple and progressive federal income tax structures based on comprehensive income which yielded equivalent revenues as the then current tax system. Issues which are raised in a consideration of progressive versus proportional income taxation are more explicitly discussed in the CRS report previously mentioned, *Progressivity in Income Taxation: A Pro-Con Discussion*.

⁶U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 127, Money Income and Poverty Status of Families and Persons in the United States: 1980 (Advance Data from the March 1981 Current Population Survey). U.S. Govt. Print. Off., 1981.

⁷Another definition of the items to be included in a comprehensive income tax base can be found in: Pechman, Joseph, ed. *Op. cit.* p. 277-298.

The Treasury's Blueprints study included a proposal for a simple three-tiered income tax rate structure, based on comprehensive income, which would provide the same degree of progressivity as that contained in the current tax system. The Treasury tax rates ranged from eight percent to 38 percent on comprehensive incomes of over \$40,000, and the structure included very few exemptions and deductions. The proposal was designed to generate revenue equivalent to the then current system, and distribute the tax burden in approximately the same manner as the then current system. However, because the tax base would have been broadened due to the lack of the myriad deductions of the then current tax code, tax rates could have been lower, and the entire income tax system would have been simplified without sacrificing any of the progressivity of the then current tax system.

In a letter to the Senate Appropriations Committee dated February 25, 1982, J. Gregory Ballentine, Deputy Assistant Secretary of the Treasury, wrote of the tax rates and revenue potential of a proportional tax and such a tax combined with a surtax on individual income. He states in part:

This is in response to your letter dated November 30, 1981, regarding a proportional tax rate and surtax for individuals.

In order to maintain the individual income tax liability levels of the 1983 budget, a proportional tax on all individual income would require a tax rate of 10.6 percent in 1983 increasing to 11.3 percent in 1987. If Old Age, Survivors, and Disability (OASDI) benefits were excluded from the tax base, and a 20 percent charitable contributions credit were allowed, the required tax rates would be 11.6 percent in 1983 and 12.4 percent in 1987.

In your letter you suggest a 10 percent proportional tax on all individual income combined with a surtax of 15 percent on income exceeding \$50,000 and 20 percent on income exceeding \$100,000. Assuming a January 1, 1983, effective date and corresponding changes in tax withholding schedules, the direct effect of this proposal would be a \$25 billion reduction in 1983 tax receipts and a \$30 billion increase in 1984 and 1985 receipts compared to the 1983 budget. The exclusion of OASDI benefits and the allowance of a 20 percent charitable contributions credit would increase the 1983 revenue loss to \$36 billion and reduce the revenue gain to approximately \$2 billion in 1984 and less than \$1 billion in 1985.

In arriving at these estimates the new tax base includes capital gains, pensions, personal contributions to social insurance, and all sources of personal money income except income currently associated with fraudulent underreporting.⁸

Paul Craig Roberts, a former Assistant Secretary of the Treasury for Economic Policy, looked at flat income tax rates needed to balance the 1983 budget using the comprehensive base of the Blueprints study. He states:

An update of former Treasury Secretary William E. Simon's "Blueprints for Tax Reform" (1976) reveals

⁸Eleven Percent Proportional Tax Needed to Meet 1983 Revenue Targets. Tax Notes, v. 14, no. 11, March 15, 1982. p. 705. Letter sent to Senate Appropriations Committee.

that a 16 percent flat-rate tax on personal and corporate income would balance the 1983 budget.

There are variations of the flat-rate tax that retain elements of progressivity without defeating the purpose of the tax. A 19 percent flat-rate tax, for example, would balance the 1983 budget and allow the first \$6,000 of income to be excluded from tax. That drops the tax rate on a \$10,000 income to 7.6 percent and on a \$20,000 income to 13.3 percent. Alternatively, an 18 percent flat tax would balance the 1983 budget and allow all transfer payments including social security to be excluded from the tax base.⁹

A study by Joseph J. Minarik, Deputy Assistant Director, Tax Analysis Division, Congressional Budget Office,¹⁰ entitled *The Future of the Individual Income Tax*, contains a section on a flat rate income tax. In his work, Minarik examines four flat-rate tax systems:

- System one represents a gross income tax on AGI (including capital gains in full) yielding the equivalent of current scheduled 1984 law tax revenues, applied to the various tax bases for 1981 income.
- System two represents the change to a flat tax rate with currently scheduled 1984 tax law unaltered.
- Under system three, the tax base is made broader by including long-term capital gains in full and prohibiting itemized deductions.

⁹Roberts, Paul Craig. How to Break the Stalemate over the Budget. Wall Street Journal, May 3, 1982. p. 30.

¹⁰As stated on the cover of the Minarik study, the author of that paper takes the responsibility for opinions and any errors, and none should be attributed to the Congressional Budget Office or any of the individuals who helped through comments, advice, or execution of portions of the paper.

- The fourth system uses the tax base of the previous system but increases relief to low-income taxpayers by increasing the personal exemption to \$1,500 and the zero bracket amount to \$3,000 for single taxpayers and to \$6,000 for joint returns.

The flat-tax rates necessary under these systems are as follows: System 1: 11.8 percent; System 2: 18.5 percent; System 3: 15.7 percent; and System 4: 18.7 percent. The distribution of tax liabilities under these alternative flat-rate systems is shown in Table 4.

In general, lower income taxpayers would find their tax liabilities greatly increased, while upper-income taxpayers would find their tax liability greatly reduced, unless large exemptions are adopted . . .

The "proper" amount of progressivity an income tax should entail is a judgment which depends upon personal notions regarding equity and social utility. Despite one's judgment regarding the appropriate degree of progressivity the federal income tax should embody, it is clear that the institution of a flat-rate tax on any income base would greatly shift the burden of the individual income tax. In general, lower-income taxpayers would find their tax liabilities greatly increased, while upper-income taxpayers would find their tax liability greatly reduced, unless large exemptions are adopted which are designed to provide income tax relief to lower-income individuals.





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PROGRESSIVITY IN INCOME TAXATION: A PRO-CON DISCUSSION

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PROGRESSIVITY IN INCOME TAXATION: A PRO-CON DISCUSSION

Although it has been a feature of the Federal income tax for forty years, progression does not enjoy universal support. Periodically, a few tax experts propose as a substitute to the current income tax a broad-based, simplified, flat-rate system. For example, in 1969 Charles O. Galvin, Dean of the Southern Methodist University School of Law, proposed a comprehensively-based income tax with a flat tax rate of 13 percent.^{1/} Recently, Russell Train, Director of the Environmental Protection Agency and former judge of the United States Tax Court, advocated a similar tax of 10 percent supplemented by an expenditure tax.^{2/} Others, although not having advocated a flat-rate tax, have advocated expansion of the tax base with an across-the-board reduction in rates that leaves the tax nominally less progressive than in its current form. In December, 1975, for example, Secretary of the Treasury William E. Simon proposed an expansion of the income tax base and the use of rates ranging roughly from 10 to 30 or 40 percent. Senator Mark Hatfield introduced a bill in the 94th Congress (S. 802) proposing a similar system.

This report is an evaluation of these and other base-broadening, progression-reducing income tax proposals. It emphasizes the issue

of progressivity rather than that of income tax base definition. Given limitations of time, the discussion in the following pages is brief, failing to do complete justice to the complexity of the issues with which it deals.

Tax experts have delineated at least six characteristics of a desirable tax system. These include equity, efficiency (neutrality), simplicity, lucrativeness, effectiveness in promoting stabilization, and effectiveness in promoting growth.

Equity. At least three principles of tax equity or "fairness" have been expounded, none of which is universally embraced. First, some argue that tax burdens should be distributed according to taxpayers' "ability to pay." The incidence of a tax, in otherwords, should reflect the means of those who pay it.

With respect to income taxation, this principle is usually thought to imply the desirability of progression. This implication follows from the assumption of declining marginal utility, i. e., that a dollar of income foregone is more valuable to a poor person (who is more likely to have spent it on a necessity) than to a rich person (who is more likely to have spent it on a luxury). A nominally proportional tax, given this hypothesis, would place a disproportionate tax burden on the poor.

Proponents of a flat-rate tax reject the assumption of declining marginal utility. Even if one accepts it, they maintain, the concept of utility is much too vague to serve as a basis for the distribution of tax burdens. They doubt whether one can compare the "utility" of one taxpayer with the "utility" of another without making extremely arbitrary and subjective judgements.

Those who argue in favor of progression do not deny that the principle of ability to pay and the assumption of declining marginal utility of income are subjective. They assert, however, that those arguing in favor of proportionality are on no firmer ground. To what objective law can the proponents of proportionality repair in support of their conception of a fair tax burden? None, argue the supporters of progression, because principles of equity are necessarily first principles, based on values rather than fact.

Some who argue in favor of proportionality admit that a presumption in favor of a given pattern of burden distribution is necessarily subjective. Many of them imply that if one is going to choose arbitrarily a guideline for future tax rate structures, the burden distribution of the current tax system is the appropriate one. Finding little or no progression in current effective tax rates, these tax experts conclude that a flat rate tax better represents current realities than the current system of progressive rates.

Charles Galvin, for example, after citing evidence that the effective rate of the Federal income tax does not vary substantially across income classes, concludes

... we are not taxing even now nearly as progressively as we say we are. Therefore, an outright recognition of proportionality would recognize realities as they are and not as the tax tables represent them to be. 3/

Russell Train argues along similar lines:

I believe current economic analysis has in fact concluded that the present overall system, taking into account the social security tax, is quite definitely regressive in its effect in any event. . . . there being so little honest progressivity in the present system, its preservation hardly justifies continuance of the present morass of complexity and special treatment. 4/

Proponents of progressivity cite studies which demonstrate that, contrary to the claims of Galvin and Train, the effective rates of both the Federal income tax and the overall Federal tax structure are progressive. A study performed by Richard A. and Peggy B. Musgrave indicates that in 1968 effective individual income tax rates ranged from 2.0 percent for individuals with incomes under \$4,000 to 18.5 percent for individuals with incomes over \$92,000 [Table 1, line 1]. Another study, conducted by Joseph Pechman and Benjamin Okner, also concluded that the income tax is progressive in its incidence, even after loopholes and the shifting of taxes are taken into account. As Table 2 indicates, these two economists found that their results varied with their assumptions concerning such shifting. Under one set of assumptions, they found that at the lower end of the income

scale, (individuals with adjusted family incomes between 0 and 3 thousand dollars) the average effective rate of the Federal income tax in 1966 was 1.4 percent. The average effective rate climbed steadily with increasing income until it reached a peak of 15.3 percent for individuals with adjusted family incomes between 100 and 500 thousand dollars. The average effective rate declined at higher income levels, falling to 12.4 percent for individuals with adjusted family incomes of one million dollars or more. This pattern of effective rates did not change substantially when different incidence assumptions were utilized. ^{6/}

The results of these two studies roughly substantiate Russell Train's assertion that the burden distribution of all Federal taxes combined is proportional or regressive. The conclusions, however, depended on the underlying incidence assumptions. Musgrave and Musgrave [See Table 1, line 5] and Pechman and Okner [See Table 3], when using incidence assumptions the latter though were regressive*, found all Federal taxes combined were roughly proportional across most of the income scale although mildly progressive at the lower and upper segments. ^{7/} However, Pechman and Okner, using assumptions they considered to be progressive**, found the burden distribution of all Federal taxes combined to be distinctly progressive throughout the income scale [See Table 3]. ^{8/}

* See Table 6, Variant 3b for a description of these assumptions.

** See Table 6, Variant 1c, for a description of these assumptions.

Some of those who adhere to the principle of proportionality argue progression in the Federal income tax is needed to offset the regressivity of state and local taxes. They maintain that the overall incidence of Federal, state, and local taxes is proportional. Switching to a proportional Federal income tax, therefore, would render the overall incidence regressive.

Estimates of the burden distribution of state and local taxes appears to be highly sensitive to assumptions concerning how these taxes are shifted. Pechman and Okner found, under their "progressive" set of assumptions [See Table 6, Variant 1c] that this distribution was curvilinear. Effective state and local tax rates started at 9.8 percent for individuals in the \$0-3 thousand bracket, dropped to 6.5 percent for those in the \$10 to \$20 thousand bracket, and rose after that to 13.8 percent on incomes over \$1 million [See Table 3]. Under their "regressive set of assumptions [See Table 6, Variant 3b] the burden distribution was clearly regressive, ranging from 14.0 percent to 4.2 percent for the lowest and highest brackets respectively [See Table 3].

Under the progressive set of assumptions, total Federal, state, and local effective rates were clearly progressive in their incidence, ranging from 18.7 percent to 49.3 percent. Under the "regressive" set of assumptions, overall burden distribution was roughly proportional ranging between 24.3 and 30.3 percent. [See Table 3]

Some maintain that, in evaluating the distributive impact of the introduction of a flat rate tax, one must take into account the incidence of the total budget, expenditures as well as taxes. Because the benefits of public expenditures accrue so disproportionately to lower income individuals, so the argument goes, the current total fiscal incidence is progressive. Reducing or eliminating the progressivity of the Federal income tax, therefore, would move this incidence closer to proportionality.

Studies of the distribution of governmental benefits by income classes are based on even stronger incidence assumptions than those underpinning studies of the burden distribution of taxes. However, the results of those studies which have been performed are not overly sensitive to these assumptions. Benefit distribution appears to be clearly regressive (i. e., benefits in general accrue disproportionately to the poor.) Musgrave and Musgrave, for example, estimated that benefits from all levels of government in 1969 accruing to individuals with incomes under \$4,000 constituted between 123.7 and 180.4 percent of income. These estimated percentages declined steadily with income until they reached between 12.3 and 24.4 percent for individuals with incomes between \$35,000 and \$92,000. (figures were not given for individuals with incomes above \$92,000) [See Table 4, lines 19-21]. Musgrave and Musgrave found the distribution of net benefits and burdens (benefits minus taxes) of all levels of government to be skewed in favor of the poor. [See Table 5, line 9]

Some feel that studies such as that performed by Musgrave and Musgrave fail to entertain the possibility that the benefits of public goods and services accrue disproportionately to the rich rather than the poor. Boris Bittker, for example, maintains that the benefits of governmental expenditures on defense, police, fire protection, and adjudication should be distributed in proportion to property ownership because they serve primarily to protect property rights. Similarly he believes that expenditures on education, health, and welfare generate large amounts of benefits to individuals in high income brackets by improving society in general. If these benefits were accounted for, Bittker concludes, one might even find that overall fiscal incidence in the United States is regressive and that introducing a proportional income tax would make it even more so. ^{5/}

TABLE 1

Estimated Distribution of Tax Burdens by Income Brackets, 1968
(Taxes as Percent of Total Family Income)

Taxes	INCOME BRACKETS										All Brackets
	Under \$4,000	\$4,000— \$5,700	\$5,700— \$7,900	\$7,900— \$10,400	\$10,400— \$12,500	\$12,500— \$17,500	\$17,500— \$22,600	\$22,600— \$35,500	\$35,500— \$92,000	\$92,000— and over	
Federal Taxes											
1. Individual income tax	2.0	2.8	5.9	7.1	7.9	10.1	10.6	12.7	14.8	18.5	9.9
2. Estate and gift tax	—	—	—	—	—	—	—	0.6	2.0	2.7	0.4
3. Corporation income tax	5.1	6.1	5.0	4.0	4.3	4.6	4.8	5.1	5.3	6.6	5.0
4. Excises and customs	2.5	2.8	3.1	3.0	2.9	2.7	2.1	1.1	0.9	0.6	2.3
5. Payroll tax	5.5	6.3	7.0	6.9	6.7	6.1	5.2	4.2	1.5	0.6	5.2
6. Total	15.2	17.9	20.8	21.6	21.6	23.4	22.6	23.8	24.5	29.1	22.7
7. Total excluding line 5	9.7	11.6	13.9	14.7	14.9	17.3	17.4	19.6	23.0	28.5	17.5
State and Local Taxes											
8. Individual income tax	—	0.1	0.3	0.6	0.7	1.1	1.4	2.3	1.6	1.3	1.0
9. Inheritance tax	—	—	—	—	—	—	—	0.2	0.6	0.8	0.1
10. Corporation income tax	0.4	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.4
11. General sales tax	3.4	2.8	2.5	2.3	2.2	2.0	1.7	1.0	0.5	0.3	1.8
12. Excises	2.7	3.0	3.3	3.0	2.9	2.5	1.9	1.0	0.8	0.6	2.1
13. Property tax	6.7	5.7	4.7	4.3	4.0	3.7	3.3	3.0	2.9	3.3	3.9
14. Payroll tax	0.2	0.5	0.8	1.0	1.0	1.0	1.1	1.2	0.2	0.1	0.8
15. Total	13.4	12.5	11.9	11.6	11.1	10.6	9.7	9.1	7.1	6.9	10.3
16. Total excluding line 14	13.2	12.1	11.1	10.6	10.1	9.6	8.6	7.9	6.9	6.8	9.5
All Levels											
17. Total	28.5	30.5	32.8	33.1	32.8	33.9	32.4	32.9	31.6	35.9	33.0
18. Total excluding lines 5 and 14	22.9	23.7	25.0	25.3	25.0	26.9	26.0	27.5	29.9	35.3	27.0

Source: For brief explanation of estimates, see text.

Notes:

Uneven bracket limits are used for computational reasons.

Line 12: Includes motor vehicle licenses, excises, and miscellaneous revenue.

Totals may not add due to rounding.

Source: Richard A. Musgrave and Peggy B. Musgrave. Public finance in theory and practice. New York, McGraw Hill[1973], p. 368.

TABLE 2

**Effective Rates of Federal, State, and Local Taxes, by Type
of Tax, Variants 1c and 3b, by Adjusted Family Income Class, 1966**
Income classes in thousands of dollars; tax rates in percent

<i>Adjusted family income</i>	<i>Indi- vidual income tax</i>	<i>Corpo- ration income tax</i>	<i>Property tax</i>	<i>Sales and excise taxes</i>	<i>Payroll taxes</i>	<i>Personal property and motor vehicle taxes</i>	<i>Total taxes</i>
Variant 1c							
0-3	1.4	2.1	2.5	9.4	2.9	0.4	18.7
3-5	3.1	2.2	2.7	7.4	4.6	0.4	20.4
5-10	5.8	1.8	2.0	6.5	6.1	0.4	22.6
10-15	7.6	1.6	1.7	5.8	5.8	0.3	22.8
15-20	8.7	2.0	2.0	5.2	5.0	0.3	23.2
20-25	9.2	3.0	2.6	4.6	4.3	0.2	24.0
25-30	9.3	4.6	3.7	4.0	3.3	0.2	25.1
30-50	10.4	5.8	4.5	3.4	2.2	0.1	26.4
50-100	13.4	8.8	6.2	2.4	0.7	0.1	31.5
100-500	15.3	16.5	8.2	1.5	0.3	0.1	41.8
500-1,000	14.1	23.0	9.6	1.1	0.1	0.2	48.0
1,000 and over	12.4	25.7	10.1	1.0	^a	0.1	49.3
All classes ^b	8.5	3.9	3.0	5.1	4.4	0.3	25.2
Variant 3b							
0-3	1.2	6.1	6.5	9.2	4.6	0.4	28.1
3-5	2.8	5.3	4.8	7.1	4.9	0.4	25.3
5-10	5.5	4.3	3.6	6.4	5.7	0.3	25.9
10-15	7.2	3.8	3.2	5.6	5.3	0.3	25.5
15-20	8.2	3.8	3.2	5.1	4.7	0.3	25.3
20-25	9.1	4.0	3.1	4.6	4.1	0.2	25.1
25-30	9.1	4.3	3.1	4.0	3.6	0.2	24.3
30-50	10.5	4.7	3.0	3.5	2.6	0.2	24.4
50-100	14.1	5.6	2.8	2.4	1.3	0.1	26.4
100-500	18.0	7.4	2.4	1.7	0.7	0.1	30.3
500-1,000	17.7	9.0	1.7	1.4	0.4	0.2	30.3
1,000 and over	16.6	9.8	0.8	1.3	0.3	0.2	29.0
All classes ^b	8.4	4.4	3.4	5.0	4.4	0.3	25.9

Source: Computed from the 1966 MERGE data file. For an explanation of the incidence variants, see Table 3-1.
Note: Variant 1c is the most progressive and 3b the least progressive set of incidence assumptions examined in this study.

^a Less than 0.05 percent.

^b Includes negative incomes not shown separately.

Source: Joseph A. Pechman and Benjamin A. Okner.
Who bears the tax burden? Washington, Brookings
Institution [1974], p. 59.

TABLE 3

**Effective Rates of Federal and State-Local Taxes, Variants
1c and 3b, by Adjusted Family Income Class, 1966**

Income classes in thousands of dollars; tax rates in percent

Adjusted family income	Variant 1c			Variant 3b		
	Federal	State-local	Total	Federal	State-local	Total
0-3	8.8	9.8	18.7	14.1	14.0	28.1
3-5	11.9	8.5	20.4	14.6	10.6	25.3
5-10	15.4	7.2	22.6	17.0	8.9	25.9
10-15	16.3	6.5	22.8	17.5	8.0	25.5
15-20	16.7	6.5	23.2	17.7	7.6	25.3
20-25	17.1	6.9	24.0	17.8	7.4	25.1
25-30	17.4	7.7	25.1	17.2	7.1	24.3
30-50	18.2	8.2	26.4	17.7	6.7	24.4
50-100	21.8	9.7	31.5	20.1	6.3	26.4
100-500	30.0	11.9	41.8	24.4	6.0	30.3
500-1,000	34.6	13.3	48.0	25.2	5.1	30.3
1,000 and over	35.5	13.8	49.3	24.8	4.2	29.0
All classes*	17.6	7.6	25.2	17.9	8.0	25.9

Source: Computed from the 1966 MERGE data file. For an explanation of the incidence variants, see Table 3-1. Details may not add to totals because of rounding.

Note: Variant 1c is the most progressive and 3b the least progressive set of incidence assumptions examined in this study.

*Includes negative incomes not shown separately.

Source: Joseph A. Pechman and Benjamin A. Okner. Who bears the tax burden? Washington, Brookings Institution [1974], p. 62.

TABLE 4

Distribution of Expenditure Benefits
(Benefits as Percent of Total Family Income)

		SELECTED INCOME BRACKETS						
		Under \$4,000	\$4,000-\$5,700	\$5,700-\$7,900	\$7,900-\$10,400	\$12,500-\$17,500	\$35,500-\$92,000	All
I. SPECIFIC BENEFIT ALLOCATIONS								
<i>Federal</i>								
1. Purchases:	Education	0.6	1.1	1.1	1.0	0.6	0.2	0.6
2.	Interest	2.1	2.0	1.2	0.6	0.8	2.3	1.5
3.	Highways	0.6	0.8	0.9	0.8	0.7	0.2	0.6
4.	Agriculture	*	0.2	0.3	0.4	0.4	2.6	0.7
5.	Medical	1.9	1.8	1.0	0.5	0.2	*	0.4
6.	Total	5.2	5.9	4.5	3.3	2.6	5.3	3.8
7. Transfers		78.3	19.8	8.8	4.3	2.1	0.2	6.2
8. Total		83.5	25.7	13.3	7.6	4.7	5.5	10.0
<i>State and Local</i>								
9. Purchases:	Education	5.5	9.9	10.4	8.7	5.4	1.5	5.2
10.	Interest	0.1	0.1	*	*	*	0.1	*
11.	Highways	1.2	1.6	1.9	1.8	1.5	0.5	1.3
12.	Medical	5.7	5.6	2.9	1.5	0.5	0.1	1.1
13.	Total	12.5	17.2	15.2	12.0	7.4	2.2	7.7
14. Transfers		14.5	1.6	0.6	0.2	*	*	0.7
15. Total		27.1	18.7	15.8	12.2	7.4	2.2	8.4
<i>All Levels</i>								
16. Purchases		17.8	23.0	19.7	15.3	10.0	7.5	11.5
17. Transfers		92.8	21.4	9.4	4.5	2.1	0.2	6.9
18. Total		110.6	44.4	29.1	19.8	12.1	7.7	18.4
II. TOTAL BENEFIT ALLOCATION								
<i>All Levels</i>								
19. Variant A		127.3	61.1	45.8	36.5	28.8	24.4	35.1
20. Variant B		123.7	58.9	45.2	36.3	29.2	24.5	35.1
21. Variant C		180.4	77.0	57.9	40.8	26.2	12.3	35.1

*Less than 0.05 percent.

Notes: Lines 2 and 10: Interest is included here under purchases, although according to national income accounts it should appear as a separate category.

Lines 19, 20, 21: For explanation, see text.

Source: Richard A. Musgrave and Peggy B. Musgrave. Public finance in theory and practice. New York, McGraw Hill [1973], p. 373.

TABLE 5

Distribution of Net Benefits and Burdens
(Net as Percent of Total Family Income)

	INCOME BRACKETS									
	Under \$4,000	\$4,000- \$5,700	\$5,700- \$7,900	\$7,900- \$10,400	\$10,400- \$12,500	\$12,500- \$17,500	\$17,500- \$22,600	\$22,600- \$35,500	\$35,500- \$92,000	\$92,000 and over
<i>Federal</i>										
1. Specific allocation	76.7	17.7	4.1	-1.9	-4.2	-5.6	-5.6	-5.1	-5.1	-5.1
2. General, variant A	4.3	2.7	1.0	0.7	0.6	-0.4	-0.1	-0.6	-1.0	-3.6
3. Total	81.0	20.5	5.1	-1.3	-3.6	-6.0	-5.6	-5.7	-6.1	-8.7
<i>State and Local</i>										
4. Specific allocation	15.7	8.2	5.9	2.7	0.2	-1.4	-3.2	-3.7	-3.4	-4.4
5. General, variant A	-1.1	-0.8	-0.6	-0.5	-0.3	-0.1	0.2	0.4	1.1	1.2
6. Total	14.6	7.4	5.4	2.2	-0.1	-1.5	-3.0	-3.2	-2.3	-3.2
<i>All Levels</i>										
7. Specific allocation	94.0	27.0	10.6	1.2	-3.7	-6.9	-8.9	-9.1	-9.4	-11.0
8. General, variant A	1.6	0.9	-0.1	-0.3	-	-0.5	0.3	0.3	1.1	-0.9
9. Total	95.6	27.9	10.5	0.9	-3.7	-7.4	-8.6	-8.9	-8.4	-11.9

Notes: Lines 2, 5, and 8: General expenditures are allocated in proportion to family income levels and tax distributions as in Table 15-1.

*Less than 0.05

Source: Richard A. Musgrave and Peggy B. Musgrave. Public finance in theory and practice. New York, McGraw Hill [1973], p. 375.

TABLE 6

Tax Incidence Assumptions Used in Pechman-Okner Study

Tax and basis of allocation	Variant 1			Variant 2		Variant 3		
	a	b	c	a	b	a	b	c
<i>Individual income tax</i>								
To taxpayers	X	X	X	X	X	X	X	X
<i>Sales and excise taxes</i>								
To consumption of taxed commodities	X	X	X	X	X	X	X	X
<i>Corporation income tax</i>								
To dividends	...	...	...	X	X	...	...	...
To property income in general	X	X	...	...	...	...	...	...
Half to dividends; half to property income in general	...	...	X	...	...	...	...	X
Half to dividends; one-fourth to consumption; one-fourth to employee compensation	...	...	...	...	...	X	...	...
Half to property income in general; half to consumption	...	...	...	...	...	...	X	...
<i>Property tax on land</i>								
To landowners	X	...	...	X	X	X	X	X
To property income in general	...	X	X	...	...	...	...	...
<i>Property tax on improvements</i>								
To shelter and consumption	...	...	...	X	X	X	X	...
To property income in general	X	X	X	...	...	...	...	...
Half to shelter and consumption; half to property income in general	...	...	...	...	...	...	...	X
<i>Payroll tax on employees</i>								
To employee compensation	X	X	X	X	X	X	X	X
<i>Payroll tax on employers</i>								
To employee compensation	X	X	X	X	...	X	...	X
Half to employee compensation; half to consumption	...	...	...	...	X	...	X	...

Source: Joseph A. Pechman and Benjamin A. Okner. Who bears the tax burden? Washington, Brookings Institution [1974], p. 38.

Some proponents of a flat-rate income tax have advocated the maintenance of a degree of progression in the tax structure through an expenditure tax with a large exemption. This suggestion was made most recently by Russell E. Train.^{6/} Because consumption as a proportion of income decreases with income, the exemption would have to be huge in order to make the tax progressive.

Some tax analysts reject the ability to pay principle as a guideline to tax equity in favor of the "benefit" principle. According to this principle, tax burdens should be allocated according to the value of the benefits generated by public goods and services. Obviously, the implications of this principle for the desirable amount of progression in the income tax depends on one's beliefs concerning the distribution of benefits by income class. Because Boris Bittker believes that this distribution is skewed in favor of high income individuals, he uses the benefit principle to defend the current progressive rate structure.

For others, "horizontal equity" rather than the ability-to-pay or benefit principles is the most important criterion for evaluating taxes. In short this principle states that individuals with equal incomes should bear equal tax burdens regardless of the sources of incomes. Many existing tax preferences violate this principle. For example, other things being equal, a taxpayer who earns his income through the realization of capital gains pays less in taxes than one

whose source of income is salary. Thus, much base-broadening is advocated under the banner of horizontal equity, too.

Some believe that the principle pertains to the issue of progressivity as well. It has been argued that property income should be taxed more heavily than earned income because it is more certain. A progressive income tax rate structure effects this differential, since property income as a percentage of total income increases as one proceeds up the income scale.

Before leaving issues of equity, one should note that not even the most adamant invariants to a proportional income tax structure believe that income below subsistence level (however that may be defined) should be subject to income taxation. How subsistence income is freed from taxation affects the progressivity of overall budget incidence. The advocates of Senator Hatfield's simpliform proposal praise it for its use of credits rather than exemptions or deductions in achieving this goal.^{7/} The credit is a more progressive instrument of tax relief than a deduction or exemption. While the tax savings resulting from a dollar of exemption depends on the taxpayer's marginal tax rate, the tax savings resulting from a dollar's worth of credit is the same for everyone, regardless of that rate.

Some argue that every dollar of income should be subject to taxation. These individuals believe that the subsistence problem should be remedied through the expenditure side of the budget.

EFFICIENCY (NEUTRALITY)

One of the most fundamental canons of mainstream economic theory and the ideology of capitalism is that purely competitive markets are most efficient. Left alone, such markets will satisfy consumer preference in the cheapest possible way. A corollary of this basic tenet is that a tax system should distort private economic decisions made under purely competitive conditions as little as possible.

Many opponents of progression believe that it distorts the pattern of several types of economic decisions. First, it allegedly distorts the worker's choice between labor and leisure, causing him to choose less of the former and more of the latter. This distortion results from the penalty that progressivity imposes on the worker for attempting to move up the income scale. In combination with the current erosion of the income tax base, it also induces taxpayers to waste time and energy in seeking ways to avoid the onerous effects of progressivity.

With respect to the purported impact of progressivity on work effort, one could argue that reducing progressivity might decrease as well as increase such effort. With each hour worked or each increment in effort garnering a larger net wage, the worker who labors until he has achieved a fixed income level might reduce his effort, reasoning that he need work less to achieve that level.

Anyway it is not clear that people have either the capacity or the desire to alter their work effort in response to changes in net salary.

As for the argument that progressivity leads people to waste time and energy in seeking ways to avoid its impact, first removing avenues of avoidance through the enactment of a comprehensive income base would drastically reduce this type of behavior, even if proportionality were not enacted. Secondly, one could argue that people would spend almost as much time in the pursuit of tax shelters even with a proportional rate structure, simply because it is natural to attempt to minimize tax liabilities under any circumstances.

It should also be noted that the broadening of the income tax would eliminate important investment incentives currently embedded in the income tax structure, such as favorable treatment of long-term capital gains, the investment tax credit, and accelerated depreciation. Thus, even if one maintains that the creation of a proportional income tax rate structure would stimulate investment, it does not follow that a complete base-broadening progression-reducing proposal would. Besides, there are ways of stimulating saving and investment through the expenditure side and through the monetary system which might be just as effective as changes in tax policy.

As for Russell Train's suggestion that a consumption tax be enacted, one could argue that such a tax would reverse the direction of the distortion in the consumption/savings decision

as well dampen consumer demand. Yet the strength of consumer demand is an important factor in the investment decision. Train's proposal, therefore might have only a limited effect on capital formation. In response, one could argue that the government could maintain overall demand strength through monetary policy and the expenditure side of the budget.

SIMPLICITY

There is a general agreement that taxes should be simple to collect and simple to comply with. Many believe that the current system is excessively complex. The multitude of schedules, the number of operations the taxpayer must perform in order to determine his or her tax liability, the increasingly frequent necessity of obtaining professional assistance to fill out returns have imposed a substantial burden on the public, diverting its energies from more productive activities. This burden purportedly has contributed to the disillusionment of the American people with government in general.

A broad-based proportional tax, so its supporters argue, would eliminate much of this complexity. Eliminating tax preferences obviously would simplify the system. Eliminating or reducing progression in the rate structure would stifle the motivation to reinstate those preferences.

Some maintain, however, that broadening the tax base would generate as much complexity as it would eliminate. Boris Bittker has argued that base expansion would create new valuation problems not raised under current law, particularly if unrealized appreciation and depreciation, the market value of annuities, and imputed income from the ownership of property become taxable. Furthermore, he argues, base augmentation might require distinctions not required under the present system. For example, if deductions of personal expenditures are disallowed, it would be necessary to establish viable criteria for their identification and distinction from business expenses. How will such a distinction be made? Bittker gives several examples of situations in which the distinction would be difficult. Would the person injured in the course of his work be permitted to deduct the physician's bill as a business expense? Would an individual be able to deduct the interest on his home mortgage if he incurred or continued the debt in order to finance a business or purchase investment securities? These examples give a taste, according to Bittker, of the complexity that base-broadening could entail.

The flat-rate consumption tax with a large exemption, which Russel Train has suggested as a progressive supplement to income taxation, would entail enormous administrative complexities. Musgrave and Musgrave have suggested that the most feasible

procedure for determining the taxpayer's annual consumption would be the following:

1. Record the bank balances at the beginning of the year
2. Add receipts
3. Add net borrowing (borrowing minus debt repayment or lending)
4. Subtract net investment (costs of assets purchased minus proceeds from assets sold)
5. Subtract bank balances at end of the year

The resulting figure would equal consumption for the year.

This procedure would raise many problems. First of all imputed consumption--e. g. , housing and home grown food--would have to be included if the tax base is to reflect all consumption. Secondly, borrowing must be accounted for. Such accounting would be difficult when the creditors are institutions, not subject to the expenditure tax.

The expenditure tax would also have to deal with the problem of long-lived consumption goods, such as housing. These might be taxed either as imputed consumption over their useful life, or at the time of initial outlay, with appropriate averaging permitted. Difficulties might also arise in distinguishing between consumption and investment. Several expenditures have both consumption and investment characteristics, e. g. , education or the purchase of shares in a country club. Finally, it might be possible for a high-consumption taxpayer to escape the tax by convincing a low

consumption taxpayer to make purchases for him, dropping both below the tax-free level in the process. ^{8/}

STABILIZATION

It is desirable for a tax to promote stable prices and dampen swings in the business cycle. Progression has often been praised as an automatic stabilizer that assists the tax system in achieving these goals. When the economy is booming and incomes are increasing, the bite of progression moderates the expansion, thereby allegedly controlling inflationary forces. When the economy is declining and incomes are decreasing, the average marginal tax rate declines under a progressive rate structure. As a consequence the reduction in disposable income resulting from the recession and concomitant reductions in demand and employment are moderated.

Opponents of the degree of progression currently featured in the income tax claim that the rate structure not only dampens expansion but retards recovery. In other words they claim that progression has such an oppressive effect on the economy that it prevents it from achieving its potential.

Growth

It has been alleged that progressivity dampens growth because it falls more heavily on savings than does a proportional or regressive income tax. This argument follows from the assumption that

the marginal propensity to save increases with income, i. e., that families with relatively high incomes tend to change their savings by a larger fraction of a change in their disposal income than do families with relatively low incomes. Studies designed to test the impact of progressivity on savings have found that a progressive tax does in fact fall more heavily on savings than would a proportional income tax. The studies disagree on the extent of the differences in impact on savings of these alternative tax rate structures. ^{9/}

Some economists refute the claim that an income tax which falls heavily on savings will reduce household savings. Those embracing this argument assume that the saver has a fixed savings target; for example, adequate retirement or enough to provide for his children's education. If the saver's income is reduced, he will have to save at a greater rate in order to meet his target. Reducing tax rates and progressivity, it follows, would decrease the rate of saving by higher income tax payers. This effect might offset the greater tendency of higher income people to substitute savings for consumption when their disposable incomes are increased.

YIELD (LUCRATIVENESS)

Advocates of base-broadening and progression-reduction point out that augmentation of the tax base would permit rate reduction without revenue loss. Galvin, for example, suggests that under his proposed flat-rate tax, the income tax rate could be set at 13 percent without any loss in revenue. Train suggests that rate could

be as low as 10 percent under his scheme. Some even contend that revenues would increase under plans such as those of Galvin and Train because the stimulus provided by their proposed rate reductions would increase taxable income.

Introducing a 10 or 13 percent flat rate income tax without reducing revenue below its current level would be possible only if the income tax base were broadened to include unrealized capital gains, whose identity as "income" is a point of contention among economists and accountants. Otherwise, even if all national income were included in the tax base, with no exemptions, deductions, or exclusions, a 16 percent rate would be necessary to avoid revenue losses. In evaluating Galvin's and Train's proposals, one should keep in mind the extreme nature of the base broadening involved.

As for the argument that revenues would actually increase under these proposals because of their sizeable stimulus to the economy, one can point out that no concrete evidence has been unearthed that the proposals would have such a large impact on taxable income.

FURTHER COMMENTS

Several of those who have advocated simplified income taxes with reductions in progression have discussed integration of the individual income tax with other Federal taxes, such as the corporation income

tax and the payroll tax. Although these questions are important, they are beyond the scope of this report.

One's beliefs concerning the appropriate degree of progressivity in Federal income taxation are important components of his image of a just society. The issue of progressivity ultimately must be resolved on the basis of value judgements, not on deductions based on objective laws.

Footnotes

- 1/ Galvin, Charles O. and Boris I. Bittker. The income tax: how progressive should it be? Washington, American Enterprise Institute [1969].
- 2/ Train, Russell E. A plan for real tax reform. Washington Post, Oct. 24, 1976: B1, B4.
Newsp
- 3/ Galvin, Charles O. and Boris I. Bittker, op. cit., p. 19.
- 4/ Train, Russel E., op. cit., B4.
- 5/ Galvin and Bittker, op. cit., pp. 52-54.
- 6/ Train, op. cit., B4.
- 7/ Hatfield, Mark O. Simpliform on income tax. Remarks in the Senate. Congressional Record [daily ed.] v. 121, Feb. 24, 1976: S 2442.
- 8/ Richard A. Musgrave and Peggy B. Musgrave. Public finance in theory and practice. New York, McGraw Hill [1973], p. 316.
- 9/ See Richard Goode. The individual income tax. Washington, The Brookings Institution [1964] p. 67; also, Musgrave, Richard A. Effects of tax policy on private capital formation, in fiscal and debt management policies, Research Studies for the Commission on Money and Credit [Englewood Cliffs, N. J.: Prentice-Hall, 1963], pp. 65, 68.

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