ALTERNATIVE SOCIAL SECURITY TAXING SCHEMES: AN
ANALYSIS OF VERTICAL AND HORIZONTAL EQUITY IN
THE FEDERAL TAX SYSTEM

DISSERTATION

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The objectives of this study were twofold. One objective was to analyze the effects of growth in the social security tax, when combined with recent changes in U.S. income tax law, on the distribution of the combined income and social security tax burden during the 1980s. The second objective was to estimate the effects of certain proposals for social security tax reform upon that distribution.

The above analyses were performed using simulation techniques applied to the 1984 IRS Individual Tax Model File. The data from this file were used to estimate the income and social security tax liabilities for sample taxpayers under tax law in effect in 1980, 1984 and 1988 and under fourteen proposals for social security reform (under 1988 law).

The results indicated that the income tax distribution was almost 25 percent more progressive under 1988 tax law than under 1980 tax law. In contrast, the combined distribution of income and social security taxes was almost 25 percent less progressive under 1988 income and social security tax law relative to 1980.
Two types of social security tax reform were analyzed. One type consisted of reforms to the basic social security tax structure, such as removal of the earnings ceiling, provision of exemptions and replacement of the current single tax rate with a two-tiered graduated rate structure. The second type of reform consisted of proposals to expand the theoretical tax base subject to the social security levy.

The results suggested that these reforms could generate substantial increases in progressivity in the combined tax distribution. In general, it would appear that changes in the social security tax structure could generate greater improvements in progressivity than expansion of the theoretical tax base, although the greatest improvement was associated with a combination of these two reforms. With regard to horizontal equity, expansion of the theoretical tax base generated the most improvement.
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CHAPTER I

INTRODUCTION

Equity in the Federal Tax System

Since its inception, the United States income tax has been progressively structured. That is, as taxable income rises, the associated tax burden increases, not just in absolute terms but in proportion to that income. The rich are theoretically asked to shoulder a greater burden in financing the government than those less fortunate.

This is frequently interpreted as evidence of a strong moral commitment in the United States to progressive taxation. Yet the social security tax, the second largest component of the federal tax system, is highly regressive\(^1\). The social security tax is regressive for two reasons. First, the imposition of a ceiling on earned income subject to the tax shields a portion of the income of those earning more than the ceiling from taxation. Additionally, since earned income typically constitutes a lesser portion of total income as income increases, the burden of those at higher income levels is further reduced [Okner, 1975].

Social Security also leads to horizontal inequities within the federal tax system. This occurs partly because family earnings are not "pooled" in assessing the social
security tax [Okner, 1975]. As a result, a family with two wage earners whose combined income exceeds the ceiling amount ($43,800 for 1987) pays more social security tax than a family with the same amount of income but only one wage earner.

Horizontal inequities may also be increased as a result of the narrow tax base subjected to the social security tax. Taxpayers deriving a portion of their total income from interest and dividends, for example, pay less social security tax than their counterparts with the same level of income, but derived solely from wages or salaries (assuming the earned income levels of the former group are less than the ceiling amount).

These inequities have typically been justified on grounds that the social security levy is not a tax but an insurance premium. Since the insurance provided protects participants from loss of income upon retirement, the levy is assessed on income during participants' working years. The ceiling on the tax base is justified on grounds that benefits replace a portion of income only up to a certain point; income in excess of the ceiling amount is essentially uninsured. Limitation of the tax base to earned income is based upon the premise that only earned income is subject to risk of loss upon retirement or disability; investment income is not affected by the decision to retire.
The problem with this rationale is that it presumes a relationship between taxes (contributions) paid into the system and benefits subsequently received. This relationship, unfortunately, is quite weak today and is projected to disappear altogether as the current generation of workers enters retirement. As this relationship breaks down, so does the rationale for assessing social security taxes in a manner inconsistent with other federal taxes.

The most significant federal tax, of course, is the income tax, though social security is not far behind. It is also this tax with which the distribution of the social security tax burden is most significantly inconsistent. The relevance of this inconsistency as a social issue grows as the social security tax's share of federal revenues grows. This issue has never been larger than it is today. By 1988, social security revenues are projected to constitute 37 percent of total federal revenues. This compares with only 30 percent in 1975 [CBO, 1987]. This rapid growth in the social security levy has been accompanied in the last eight years by a series of substantial reductions in nominal income tax rates. It seems quite likely that as a result of these two trends, progressivity in the income tax system may now be largely neutralized by regressivity in the social security tax system.

Proposals for Reform

Several proposals for reform of the social security tax
have been suggested in response to these perceived inequities. These suggestions have ranged from proposals for introduction of exemptions and deductions to the social security tax base [Okner, 1975; Break and Pechman, 1975; Break, 1977; Musgrave, 1981] to appeals for raising or eliminating the ceiling on income subject to the tax [Okner, 1975; Seidman, 1977; Davis et al., 1979; Glasser et al., 1979; Smedley, 1981] to calls for complete elimination of the payroll tax [Brittain, 1972; Pechman et al., 1968; Okner, 1975; Friedman, 1972].

Provision of Exemptions. Provision of personal and dependent exemptions from the tax base has generally been suggested on grounds of implementing tax relief for low-income workers [e.g., Okner, 1975]. With the advent of the earned income credit in 1975, however, this concern has been largely alleviated. The earned income credit allows low-income workers a credit against their income tax equal to 14% of their first $5,714 of earned income (prior to the Tax Reform Act of 1986, the credit was 11% of the first $5,000 earned income). The credit, which is phased out as earned income exceeds $9,000 (1988), is refundable, thus operating very much like a negative income tax. The result is to reduce dramatically the tax burden of those at the very bottom of the income scale.

It is therefore not clear that the introduction of exemptions to the social security tax base is necessary to
alleviate the tax burden of the very poor. However, exemptions might still be useful for recognizing other differences among taxpayers. Pechman, Aaron and Tausig [1968], for example, called for the use of exemptions to recognize differences among ability to pay for different taxpaying units with the same level of income. "Making ends meet on an income of $3,000 is much more difficult for a man with a wife and two children than it is for a single person without dependents" [Pechman, Aaron and Tausig, 1968, p. 182].

Elimination of the Earnings Ceiling. One problem with introducing personal and family exemptions into the social security tax base is that revenues would be decreased. Okner [1975] suggests a variety of means for recouping such lost revenue. Perhaps the most direct method would be to raise the tax rate. However, Okner argues that a preferable method would be to raise or remove the ceiling on earnings subject to the tax.

Removing the earnings ceiling would lead to two apparent improvements. First, it would increase the overall progressivity of the tax. Recall that one reason the tax is regressive is because it is not assessed on earnings above the ceiling level, thus reducing the net effective tax rate paid by high wage earners. Additionally, elimination of the ceiling would reduce the differences in effective tax rates faced by taxpaying units
within the same income groups. Families with two wage earners would no longer face higher effective tax rates than their counterparts with the same level of earned income (above the ceiling amount) but only one wage earner. In effect, removal of the income ceiling would accomplish the pooling of family income called for by Okner [1975].

Even if the ceiling were removed and exemptions provided, regressivity in the social security tax system would not necessarily be eliminated. Perhaps the primary source of regressivity in the payroll tax is the narrow tax base; since earned income decreases as a portion of total income as the latter increases, effective payroll tax rates tend to be lower for upper income groups. Suggestions for further increasing the progressivity of the payroll tax fall into two categories: (1) maintaining the existing social security base while increasing the progressivity of the rate structure, and (2) expanding the tax base.

Increasing Progressivity in the Existing Structure. One means of further increasing the progressivity of the social security tax structure is to provide personal and dependent exemptions for lower and middle income taxpayers, but phasing them out as income exceeds a certain level, much the way the Tax Reform Act of 1986 provides for phasing out exemptions in the personal income tax [Okner, 1975]. This provides a distribution of effective tax rates on earned income ranging from zero for families with income below the
exemption level to the full social security tax rate for families with earnings above the phase-out level. This still is not likely to result in overall progressivity within the social security system, but clearly it moves the distribution of effective tax rates in the direction of more progressivity (or less regressivity) and may therefore result in a more progressive distribution of overall federal tax rates.

Alternatively, or additionally, progressivity could be increased by replacing the existing proportional social security tax rate with a progressive rate schedule [Okner, 1975]. A progressive rate schedule could be implemented by itself or in combination with any of the above proposals. Again, this is not likely to produce progressivity in the social security system across the entire distribution of earnings; unless the degree of progressivity is substantial, regressivity will likely still exist at high levels of income due to the availability of alternate sources of income. But any increase in progressivity in the social security system serves to increase progressivity in the overall federal tax system.

Expanding the Tax Base. Perhaps the major source of regressivity in the social security tax system is the limited base to which it is applied. Even without the ceiling, upper income taxpayers face lower effective tax rates due to the diversity of sources from which they
receive their income [Pechman, Aaron and Tausig, 1968; Okner, 1975]. Thus, perhaps the most effective means of reducing regressivity in the social security taxing system would be to expand the tax base.

The most direct suggestion for expanding the social security tax base is simply to incorporate the social security tax into the income tax system [Pechman, Aaron and Tausig, 1968; Brittain, 1972; Okner, 1975]. This proposal clearly would resolve the distributional conflict between the two tax systems. The distribution of the overall federal tax burden would conform directly with that of the federal income tax. However, this proposal is subject to objection on at least three grounds. First, the required increase in income tax rates would likely be politically unpalatable [Fried et al., 1973]. Though it is true that the total tax burden should not increase under such a plan, it must be remembered that in the current system a large portion of the tax is assessed indirectly, through employers. This indirect tax may very well be necessary to the success of the social security system. Particularly as revenue needs, and thus the tax rate, of the system expand, there are strong political motives for maintaining an indirect source of financing the system.

A second objection is based on a concern for "fiscal" discipline [Thompson, 1983; O'Neill, 1983]. The current system, in which social security benefits are financed by a
separate tax, serves as an "institutional check against the political temptation to overpromise" [Thompson, 1983, p. 1460]. Because benefits can only be paid out of current payroll tax revenues plus accumulated past surpluses, Congress cannot liberalize benefits without simultaneously increasing payroll taxes. Its sense of political and fiscal responsibility might be diminished somewhat if benefits were financed out of less visible general revenues.

A third objection is concerned with individual dignity. Maintenance of social security as a separate system, financed by its own taxing mechanism, allows the recipients of social security benefits to think of those benefits as an earned right rather than a welfare distribution. That is, recipients paid social security taxes themselves to help finance benefits paid to earlier retirees and have thereby earned the right to similar benefits in their own retirement years [Ball, 1947; Thompson, 1983]. This is a compelling social argument for maintaining social security as an independently financed system.

The social security tax base could be expanded, however, without incorporating the social security tax into the income tax system. The base might be expanded to include only some of the larger sources of income subject to the income tax. For example, interest and dividends, perhaps the major sources of income for the wealthy other than wages and salaries, could easily be subjected to the
social security tax. Indeed, the information reporting mechanism is already in place. It would be a relatively simple matter to extend the coverage of ordinary withholding provisions to include these items.

If further expansion of the tax base is desired, this could be accomplished simply by expanding the definition of earned income subject to the self-employment tax. The base could be extended to include all items subject to the income tax, as well as some items which are exempted from that tax, while still avoiding confusion with the income tax. This would seem a particularly suitable method for expanding the base if some of the other proposals discussed above were adopted since Schedule SE, from which this tax is computed, would probably be required to play a major role in effecting the provision of exemptions, as well as the phasing out of those exemptions, from the social security tax base. It would require little further modification of the form to subject other income sources to the tax.

Purpose of the Study

The objectives of this study are twofold. One objective is to analyze the effects of recent changes in the income tax structure, when combined with steadily increasing social security tax rates, on the distribution of the combined income and social security tax burden.

The second, and primary, objective is to analyze the impact of the various social security tax reform proposals
discussed above upon the distribution of the combined income and social security tax burden. The focus at this stage will be primarily upon progressivity, although attention will also be paid to horizontal equity concerns (i.e., variation of effective tax rates within income groups).

Method of Research

The above questions are analyzed using simulation techniques performed on actual tax return data. The source of data for the study is the Internal Revenue Service Individual Tax Model File for the year 1984. Tax liabilities for taxpayers in this file are recomputed assuming the various tax law changes and reform proposals of interest were in effect in 1984. Analysis is based upon these recomputed tax liabilities.

Organization of the Paper

The next chapter presents an overview of previous research relevant to this study. Following that comes a chapter discussing the theoretical arguments surrounding the social security tax and its proper distribution. Chapter IV then provides an in-depth description of the research methods and procedures underlying this analysis. The results of the analysis are discussed in Chapter V and the major conclusions to be drawn are summarized in Chapter VI. Chapter VI also discusses the various limitations to which these conclusions are subject and notes the intended contributions of the research. Though bibliographies are
provided with each chapter, a single, combined bibliography follows Chapter VI. Beyond this, appendices to the paper present relevant illustrations (Appendix A), tables (Appendix B) and graphs (Appendix C). Finally, Appendix D presents a discussion of the view expressed by Scholes and Wolfson [1987] that studies such as this understate the effective tax burden faced by the wealthy by failing to consider the costs and reduced returns associated with tax-induced investment decisions.
CHAPTER I NOTES

1 The social security tax provided approximately 4 percent of total federal revenues in 1945; this share had grown to 24 percent by 1972 [Brittain, 1972] and to 31 percent by 1984 [Sommerfeld, et al., 1985]. By 1988, it is projected to provide 37 percent of total federal revenues and will be the largest tax paid by most workers [CBO, 1987].

2 As noted above, Social Security is projected to account for 37 percent of federal revenues in 1988. In comparison, the income tax is projected to account for 45 percent of total federal revenues [CBO, 1987].

3 For example, tax exempt interest could be subjected to the social security tax. Additionally, Colby [1982] argues that fringe benefits should be included in the social security tax base.
CHAPTER I REFERENCES


CHAPTER II

REVIEW OF THE LITERATURE

Introduction

A wealth of literature has developed around the social security system. Concern has primarily focused on two issues: the financial stability of the system and the distributional equity of the system. Though conceptually these may be approached as independent issues, concerns for the future financial stability of the system may have significant practical implications for positions taken in the debate on the distributional equity of the system. With the exception of a short discussion of these implications, concerns for the financial stability of the system will not be addressed in this chapter. The focus instead shall be on the literature surrounding the debate over perceived distributional inequities in the social security system.

Thompson [1983] points out that the debate over the distributional proprieties of the social security system is essentially the result of differences in opinion regarding the proper conceptual framework for analysis of the U.S. social security system. As will be discussed in Chapter III, two basic conceptual frameworks emerge from the social security literature. On one side of the debate are those
who view the social security system as an insurance system. From this perspective, the U.S. system of social security is seen as a government mandated insurance system providing protection for its participants against the risk of earnings loss due to retirement, disability or death. Contributions are paid in by the current generation of workers and benefits will be paid out to these workers upon their retirement. Since the system insures earnings, it is appropriately financed by a tax on those earnings. Thus, no concern is expressed over the appropriateness of payroll tax financing. Use of the payroll tax is justified under benefit theory; the costs of the system are borne by those expected to receive the benefits. The concern from this view centers instead on the relationship of benefits received to contributions paid in. An equitable insurance system pays benefits commensurate with contributions previously collected.

The opposing viewpoint depicts social security as a tax transfer system rather than an insurance program. From this view, the social security program is merely an intergenerational transfer system. The current generation of workers makes contributions not to finance its own retirement but to provide benefits to the current generation of retirees. Benefits received by current retirees are only tenuously related to contributions previously paid in. And demographic trends make it likely that benefits received by
future retirees will be even less related to contributions previously made. Thus, benefit theory does not and cannot justify the current distribution of the burden of financing the system. The payroll tax should therefore be analyzed as a tax, and not as an insurance premium, and its burden should be distributed in accordance with generally accepted canons of taxation, most notably the standard of ability to pay.

These conceptual frameworks are the subject of the next chapter but are relevant here because they influence the types of reform proposals suggested by participants in the social security debate. Essentially, proposals for reform of the existing social security system fall into two broad categories. One category consists of proposals for restructuring the components of the existing program. These proposals are founded on the premise that social security is an insurance system, albeit an imperfect one. They tend to consider both the benefit and contribution sides of the system simultaneously, proposing reforms to more closely align social security with a classic insurance model.

Those who view social security as a tax transfer system, on the other hand, tend to suggest altogether different reform proposals. They focus solely on the revenue side of social security and call for reforms to bring about a more progressive distribution of the burden of financing the system.
In addition, there is another category of proposals which is not particularly influenced by either conceptual model of social security. This category consists of proposals for phasing out social security altogether rather than reforming it. Some proposals call for replacing social security with a voluntary system of public or private retirement insurance while others call for merely eliminating it with no replacement at all.

The remainder of this chapter is organized along these lines. First, a general discussion of the various proposals for eliminating social security is undertaken. The next section discusses proposals for restructuring the existing system to more closely align it with an insurance program. This section is followed by a discussion of the various proposals to increase the progressivity of the social security tax. Finally, a summary is provided of the more salient points of each category of reforms and conclusions are drawn which influence the direction of the balance of this study.

Eliminating Social Security

Perhaps the most ardent critic of the social security system has been Milton Friedman. Friedman [1972, 1977] has condemned the social security program as a "chain letter" in which the current generation of workers pays in monies to finance the retirement benefits of the current generation of retirees. Since workers' contributions are spent on current
benefit obligations rather than paid into trust funds to secure future obligations, these workers must trust future generations to pay the benefits to which they expect to be entitled. The implication is that at some point this trust may prove to have been misplaced.

Friedman appears to be opposed to any form of governmentally mandated savings or "insurance", but is especially opposed to social security because of its unsound financial structure and its inequitable benefit structure. As noted above, he is not confident in the ability of the system to finance benefits at currently expected levels for future retirees. He is also unsatisfied with the benefit structure of the system on equitable grounds. He asserts that the relationship between taxes paid and benefits received is an extremely loose one. Millions of people will receive no benefits attributable to their taxes because they receive benefits as spouses, or because they continue to work beyond retirement age. Among those receiving benefits, some will receive roughly equivalent benefits, though they may have paid very different amounts of tax due to differences in the length of time they were working participants in the program. Married retirees may receive significantly more benefits than their single counterparts who paid similar amounts of taxes. And, of course, due to the financial instabilities inherent in the system, future retirees will likely receive substantially less benefits
relative to their contributions than current retirees.

The best solution in Friedman's view is simply to abolish the social security system altogether. Of course, he recognizes that morally, and politically, abolition of social security cannot be effected outright. The government must honor its commitments to participants who have accrued future benefit entitlements. He calls for eliminating the payroll tax and issuing government bonds (financed out of general revenues) to current retirees and workers in amounts equal to the discounted value of their future benefit entitlements. Workers would then be charged with the responsibility of providing for their own retirement; those who fail to do so, or who do so inadequately, would be entitled to means-tested Supplemental Security Income (SSI) benefits.

Buchanan [1968] condemned social security on similar grounds. And, like Friedman, he called for eliminating the current social security system and issuing government bonds to current participants to satisfy their accrued benefit entitlements. However, Buchanan recognized that there may be a "genuine collective interest" in government mandated retirement savings; by requiring workers to save for their own retirement, the future strain on society to provide for the general welfare of the retired population is reduced. Thus, unlike Friedman, Buchanan called for replacing social security rather than eliminating it. Under his plan,
workers, rather than being required to pay payroll
taxes, would be required to purchase social insurance bonds.
These bonds, which could be purchased from private insurers
as well as from the government, would be nontransferable and
would earn a return tied to the rate of interest on long
term treasury bonds or the rate of growth in GNP.

It is not clear what this plan would accomplish.
Buchanan argued that the major improvement is that, unlike
in the existing program, participants would receive a claim
against the government in exchange for their contributions.
However, the system as Buchanan envisioned it would still be
financed on a pay-as-you-go basis; that is, proceeds from
current period bond sales would be used to finance current
period bond redemptions, with any deficits made up from
general revenues. Thus, the protection offered by the
existence of these explicit claims against the government
does not seem any stronger than that offered by the
implicit claims which arise in the current system. Indeed,
the claims provided in the current system may afford
stronger protection against inflation. Both payroll taxes
and benefits tend to rise with inflation; the benefits
received from redeeming social insurance bonds, on the other
hand, would be fixed by the terms of the bonds themselves.
In practice, the only substantial difference between
Buchanan's plan and the current system is that retirement
benefits under the former would presumably relate directly
to previous contributions. This could just as easily be accomplished by reforming the benefit structure of the existing program.

Browning [1973] criticized the reliance on general revenues to finance bond redemptions in Buchanan's plan. As an alternative, he suggested that the required level of bonds to be purchased by workers in a given year be set so as to insure that the proceeds from bond sales are sufficient to cover bond redemptions. Additionally, unlike Buchanan, Browning would have allowed the bonds to be transferable, allowing workers some flexibility in providing for their retirement. Presumably, Browning's plan did not constitute governmentally mandated retirement saving because workers could turn to secondary markets to sell their bonds if desired.

Though offered as an improvement to Buchanan's plan, Browning's alternative suffers similar limitations. The system still would be financed on a pay-as-you-go basis; indeed, tying required bond sales to expected bond retirements makes the plan even more like the existing social security program. Browning's proposal is further subject to the criticism that it does not protect society against worker "myopia"; that is, those workers who choose not to save for retirement, and sell their bonds in the secondary market, will still be protected in their retirement years by SSI or other similar transfer plans.
The net effect of Browning's proposal would appear to be the transfer to the government of pension services currently provided in the private sector.

A very different approach to eliminating social security has been proposed by Ferrara [1982]. He proposed a plan under which workers would gradually replace participation in the social security system with participation in individual retirement accounts. In Ferrara's plan, IRA contributions would be deductible against worker (and employer) payroll tax liability. The portion of the payroll tax liability which could be offset annually would be gradually increased over a period of 20 years, allowing workers to gradually shift their social security contributions into their own retirement savings accounts. Those electing to make the shift would be entitled to fewer social security benefits upon retirement.

Like Buchanan's, Ferrara's plan provides for replacement of social security with a mandatory savings plan; workers not contributing to IRAs would be required to pay more social security taxes. But unlike Buchanan's plan, Ferrara's proposal would not be financed in the future by a pay-as-you-go system. Thus, it would, in the long run, effectively convert the social security system into an actuarially funded, private sector retirement savings plan, thereby answering the criticisms regarding financial instability and distributional inequity. The difficulties
lie in the short run, however. During its phase-out, the social security system would continue to be funded on a pay-as-you-go basis, but payroll tax revenues would decline considerably. Ferrara, like Buchanan, proposed that any shortfalls in payroll tax revenues during this period be made up out of general revenues. This seems likely to require a significant increase in income tax rates, and thus may not be politically feasible. Perhaps more important, it would effectively require the current working generation to finance both its own retirement benefits and those of the current generation of retirees. That is, the working generation would continue to pay payroll taxes, would be faced with higher income taxes due to the reduction in payroll tax revenues, and would be responsible for funding its own individual retirement accounts. Further, it would receive no benefits from social security during its retirement years. The alternative would be to drastically reduce benefits to current retirees. Both of these alternatives seem questionable on moral and political grounds.

These are not the only authors who have advocated the elimination or replacement of the social security system, but their proposals are representative of the types of plans suggested by proponents of social security repeal. For example, Hobbs and Powlesland [1975] proposed essentially the same plan as Buchanan except that they would
tie the rate of return on government issued social insurance
bonds to the rate of increase in prices where that rate
exceeded the long-term treasury bond rate or the rate of
increase in GNP. More recently, Rogers [1986] issued a
passionate appeal for the gradual phasing out, apparently
without replacement, of the social security system on much
the same grounds as Friedman. Weaver [1981] has proposed a
plan similar to (though less specific than) that of Ferrara.

All of these plans share the common goal of eliminating
the existing system of social security, advocating in its
stead either voluntary or mandatory private retirement
savings. Unfortunately, each of the different types of
proposals appear themselves to be flawed, either on
political or conceptual grounds, or both. Absolute repeal
of the social security system, as advocated by Friedman and
Rogers, seems unquestionably to be outside the realm of
political possibility and is perhaps subject to criticism on
moral grounds as well. And, as noted above, the various
proposals for replacement of the system suffer the
criticisms that they do not really solve the problems
encountered by the existing system or impose an unrealistic
burden on the working generation. But the proposals are
useful in that they point out the limitations and areas of
conflict in the existing system. Other authors have
proposed reform, rather than replacement, of the existing
system in order to address these perceived limitations.
Restructuring the Existing Program

Those who favor restructuring the existing social security program tend to work within the insurance framework. They agree that the benefit structure is inequitable but argue that the system should be restructured rather than dismantled. The basic problem with the system from their viewpoint involves a conflict between the insurance goal of individual equity and the welfare goal of social adequacy. Individual equity in an insurance program requires that participants get out of the system at least as much as they put into it (on average). This would require benefits commensurate with contributions. Social adequacy, on the other hand, requires that benefits be structured so as to insure a socially adequate level of economic security for all participants. The adoption of this welfare oriented goal of social adequacy has presumably caused the system to lose sight of its original purpose of providing pension insurance for its participants. The problem is further compounded because the system is perceived to be a poor welfare mechanism as well; due to the absence of means testing requirements, the system's efforts to reduce poverty are not target efficient. It is not surprising that reform proposals calling for restructuring the existing system invariably call for division of these two objectives into separate programs.

These proposals are generally based on a comparative
analysis of the returns received by various generations on their social security contributions. For example, Outslay [1987] compared the returns to be received by participants beginning work in 1985 on their contributions to those received by participants retiring in 1985. He used three different equity models -- an actuarial model, an annuity model and a breakeven model -- to estimate the extent to which participants can expect to achieve individual or family equity under varying economic assumptions. The results confirmed that there has been a significant decrease in the levels of equity that can be expected by future beneficiaries compared to current retirees and compared to absolute standards of equity. Participants retiring in 1985 can be expected to receive more than equitable returns on their contributions under all three models while those just beginning work in 1985 can expect much lower returns on their contributions than would be experienced in private insurance plans. Others have performed similar analyses and obtained similar results [e.g., Meyers and Schobel, 1984; Boskin, et al., 1987].

To solve this problem, Munnell [1977] proposed a detailed scheme for conversion of social security into a pure public insurance program. Boskin [1977 and 1986] proposed essentially the same plan. Both authors rationalized the optimal social security system as the second tier of a three-tier retirement system. Supplemental
Security Income (SSI), the first tier, would take over responsibility for the social adequacy goal now dominant in the social security system. As a result, social security (the second tier) would be free to concentrate solely on the individual equity goal. That is, social security would be transformed into a pure insurance system from which beneficiaries receive retirement benefits based strictly upon their lifetime contributions. The mandatory nature of the program is justified as above on grounds of myopia: workers are forced to provide for their retirement years so that society will not be forced to care for them.

Social security is thus rationalized as a system in which participants are required to provide for some minimum level of retirement insurance so that they will not become stewards of society in their post-employment years. Those who desire additional economic security are free to participate in private pension plans, which make up the third tier in this system. These plans, though supported and encouraged by various government programs -- most notably the income tax system -- are purely optional and allow individuals to provide for retirement income over and above the minimums provided by SSI and social security.

Given Munnell's and Boskin's rationale for the ideal system, their suggestions for reform are not surprisingly concentrated on the benefit side of the system. They propose elimination of both the minimum benefit level (as
has now been done) and the progressive benefit schedule, accompanied by an intensive effort to integrate the social security system into the proposed three tier format.

Burns [1970] and Ozawa [1982] advocate essentially the same proposal except that they would replace the means-tested SSI program (the first tier) with a non-means-tested, minimum level stipend designed to assure an adequate level of income for retirees without imposing upon them the indignities perceived to be associated with means testing. This stipend, like SSI payments, would be financed from general revenues.

All of these proposals advocate two primary reforms to the social security system. First, they call for explicit separation of the insurance and welfare goals of the system. This allows the program to conform more exactly to an insurance program while at the same time making provision for a socially adequate level of economic security upon retirement, albeit via a separate program. Additionally, since first tier benefits would be funded from general revenues, these proposals provide for a different division of program costs between regressive payroll taxes and the progressive income tax.

Some doubts remain, however, that equity, in the insurance sense, is an attainable objective in a pay-as-you-go system even when the social adequacy objective is shifted to another program. Much has recently been made
in the literature of U.S. demographic trends indicating that the proportion of retirees to workers in the population will increase dramatically in coming years [e.g., see Rogers, 1986; Outslay, 1987]. The problem is that the working population is shrinking while the retirement population is growing. Since benefit payments for the currently retired and retiring generations are not funded (and the prospects that they will be in the near future are negligible), this requires an increasingly greater burden be borne by current workers in order to finance these benefits. In order for these workers to later receive equitable benefits, in the insurance sense, upon their own retirement, the benefit structure will have to be sweetened significantly. This in turn will require an even greater burden be placed upon future workers. In short, the current financing mechanism requires a growing labor force to sustain the goal of individual equity. In a period in which the labor force is declining, relative to the nonworking population, individual equity may not be an attainable goal in an unfunded social security system.

Additionally, some objections may be raised to the proposal to separate the burden of financing the system between payroll taxes and general revenues. Certainly, this proposal would answer some of the criticisms regarding the equity of the payroll tax distribution; if individual equity could be achieved in the second tier social insurance
program, the regressive nature of payroll taxes might be justified on grounds of benefit theory. But, financing the first tier social adequacy program from general revenues may raise doubts concerning the long-term political viability of this aspect of the program. Particularly in a plan similar to those proposed by Ozawa [1982] and Burns [1970], in which the first tier of the program consists of a minimum level, non-means-tested stipend to everyone of retirement age, the cost of benefits provided makes them vulnerable at budget-cutting time when this aspect of the system is not self-financed. Conversely, some authors [e.g., Thompson, 1983] have warned that financing such benefits from general revenues makes them highly susceptible to political overpromising when budget cuts are not at issue.

Another concern is that regarding individual dignity. The general revenue financed portion of the program is clearly welfare, whether a means test is included or not. And, given the prohibitive cost of a non-means-tested first-tier program, some sort of means test would almost certainly be a political necessity. For example, Ozawa's estimate of the 1982 cost of her proposed first-tier program was almost as high ($144 billion) as the total cost of the entire social security program in 1982 ($155 billion) [Thompson, 1983]. The almost certain requirement of a means test in the first tier of these programs further identifies them as welfare programs, a label that many participants in
the social security debate denounce as individually stigmatizing [e.g., Aaron, 1982; Viscusi, 1979; Warlick, Berry and Garfield, 1982].

More Progressive Financing

Other critics find much the same faults with the social security system, but offer conceptually different solutions. They agree that the system emphasizes social adequacy at the expense of individual equity. But they express doubts that the insurance objective of individual equity could ever be achieved in a pay-as-you-go system even without this conflict of goals. As a result, they tend to disregard the conceptual view of social security as a public insurance system, preferring instead to rationalize it as a politically institutionalized tax transfer system.

From this view, the benefit and revenue components of the system are considered independently. Distributional inequities in the system are seen not so much in the way benefits are distributed among participants, but rather in the way the burden of financing those benefits -- i.e., the payroll tax -- is distributed. The payroll tax is analyzed as a component of the federal tax system and proposals for reform tend to emphasize changes that would cause the distribution of the payroll tax to conform more closely to the distribution of the U.S. income tax, the other major component of the U.S. tax system.

Pechman, Aaron and Tausig [1968] used the 1964 IRS tax
return sample to illustrate the highly regressive distribution of effective payroll tax rates under 1973 social security law. They compared this distribution to those that would be obtained if the payroll tax were replaced by a proportional tax on consumption or by a flat rate tax on taxable income as defined in the income tax system. They found that the consumption tax alternative appeared even more regressive than the payroll tax while the income tax alternative was not surprisingly highly progressive. On these grounds the authors argued that the payroll tax should be integrated into the individual income tax system. Alternatively, they suggested the provision of exemptions or allowances to the payroll tax base, financed from general revenues. This would have the effect of shifting a portion of the burden of financing social security to the progressively distributed income tax while simultaneously reducing the regressivity of the payroll tax.

Brittain [1972] further explored the Pechman, et al. proposal to provide exemptions from the payroll tax base. He used the 1964 IRS tax return sample to analyze the distributional effects of providing exemptions to the payroll tax base. Not surprisingly, Brittain found that the introduction of exemptions to the tax base was quite effective at reducing the tax burden on low income families. However, due to the existence of the earnings ceiling, the
tax was still highly regressive for earnings above the ceiling. Rapid phase-out of the exemptions as earnings moved beyond the ceiling increased the tax burden somewhat for higher income taxpayers, but not enough to diminish significantly the overall regressivity of the distribution.

This led Brittain to analyze the effects of raising the ceiling. Increasing the ceiling level provided two benefits. First, the range of progressivity of the tax was extended. Additionally, the ceiling increases recouped most of the revenue lost by the introduction of exemptions. Still, however, the regressivity of the payroll tax curve above the ceiling persisted as strongly as before. Even when the ceiling was completely eliminated, the rate curve eventually became regressive due to the existence of nontaxable sources of income.

Thus, although these payroll tax reforms were effective in alleviating the burden of the poor, Brittain joined with Pechman, et al. in calling for stronger measures to eliminate regressivity in the social security financing mechanism. He proposed that the payroll tax be replaced by general revenue financing in order to fully bring the overall distribution of the social security tax in line with that of the individual income tax, the centerpiece of the U.S. federal tax system.

It is interesting that although both Pechman, et al. and Brittain were concerned about the distributional
conflicts introduced to the federal tax system by the payroll tax, they confined their analyses largely to study of the payroll tax in isolation. Brittain analyzed the combined effective income and social security tax rates for hypothetical taxpayers with different incomes and family sizes to illustrate that the regressive nature of the payroll tax might actually dominate the progressivity of the income tax over a substantial earnings range surrounding the earnings ceiling. But though he used the 1964 IRS tax sample in his empirical analysis, he confined his attention strictly to the distribution of the payroll tax as did Pechman, et al.

Okner [1975] used the 1970 IRS Tax Model File to estimate the effects of the reforms proposed by Pechman, et al. and Brittain on the combined distribution of income and social security taxes. He analyzed the effect on this combined distribution of providing exemptions to the payroll tax base under two alternative financing schemes: financing the exemptions from general revenues and "self-financing" the exemptions with other payroll tax reforms. In the self-financed scheme, the cost of the exemptions was recouped by increasing the payroll tax rate and raising the ceiling. In addition, the effects of phasing out the exemptions were considered. He concluded that the overall combined distribution of the income and social security tax burdens was actually more favorable when payroll tax relief
for low income taxpayers (via provision of exemptions) was self-financed by removing the taxable earnings ceiling and slightly increasing the payroll tax rate than when it was financed by general revenues.

Like Pechman, et al. and Brittain, Okner actually favored full integration of the income and social security tax systems as the most efficient means of providing tax relief for low income taxpayers and increasing the overall progressivity of the tax system. However, he was not convinced that such a radical change in the social security system would be politically palatable, especially given the sizable increase in income tax rates which would be required. Thus, he called for more moderate reforms to the payroll tax, self-financed as described above. Others have suggested the same reforms on essentially the same grounds [e.g., Break and Pechman, 1975; Break, 1977].

Others working within this framework have proposed that the payroll tax be replaced not with the income tax but with a value-added tax (VAT). Al Ullman, Chairman of the House Ways and Means Committee, proposed a bill in 1979 (HR 5665) to create a VAT, the revenues from which would be used to replace those from the payroll tax (along with a portion of the revenues generated by the individual and corporate income taxes). More recently, Wetzler [1983], proposed replacement of the payroll tax with a VAT on basically the same grounds that others have proposed replacement of the
payroll tax with the income tax. He argued that the insurance analogy of social security is gradually being undermined by economic, demographic and political trends and that the regressive nature of the payroll tax makes it unsuitable as means of financing the social security system once this analogy breaks down. As an alternative, he suggested a VAT, apparently primarily on the grounds that it would be more progressive than the payroll tax.

The VAT proposal, unfortunately, appears to be motivated primarily by the desire to see the U.S. adopt a VAT. It is not clear that such a tax would provide any advantages over the proposals discussed above, nor even necessarily over the existing payroll tax. First, it seems misleading to assert that a VAT would be more progressive than the payroll tax. A more accurate description would be that it is less regressive. For even if Wetzler is correct in asserting that a VAT would shift some of the burden of financing the social security system upward, the tax would still be overwhelmingly regressive. This is because the VAT is essentially a tax on consumption and consumption as a percentage of income tends to be negatively related to that income. Furthermore, it is not entirely clear that Wetzler is correct in assuming that the VAT would be less regressive than the payroll tax. Recall from the discussion above that Pechman, et al. estimated that a flat rate tax on consumption would actually be more regressive than the
payroll tax (in 1964). Thus, if the regressivity of the payroll tax is the primary motive for replacing that tax, replacement with a VAT appears less preferable than replacement with the income tax and probably less so than mere reform of the existing payroll tax.

Musgrave [1981] points out that if other factors are considered, the VAT replacement proposal is less attractive still. A VAT would likely be inflationary, at least initially, as Wetzler admits. Furthermore, it would shift part of the burden of financing social security onto the retired, the very group which social security is trying to assist. Finally, a VAT would completely sever the link between social security benefits and the taxes raised to finance them, thus making the system vulnerable to Congressional lapses of irresponsibility. In light of these criticisms, the proposal to replace the payroll tax with a VAT would appear inferior to both proposals for moderate reform of the payroll tax and integration of the payroll tax into the income tax system.

Summary and Concluding Remarks

The purpose of this chapter has been to review the literature relevant to the current study. To be sure, an exhaustive survey of that literature has not been presented. Rather, a sample of studies has been discussed that is representative of the major criticisms of the program and the proposed solutions that have emerged from the
literature.

As noted in the introduction, essentially two types of concerns have been expressed about the social security system. These concerns have addressed either perceived financial instabilities inherent in the system or perceived inequities associated with the benefit structure and/or the payroll tax. Though focusing primarily on concerns regarding equity in the system, this chapter has addressed, in a somewhat peripheral manner, concerns regarding the system's financial stability as well. This is because these concerns have implications for future benefits under the system, and thus for intergenerational equity within the system. Also, potential financial instabilities in the future may act as practical impediments to enactment of certain proposals for social security reform.

The chapter also identified two general categories in which participants in the debate on equity in the social security system may be classified. The first general category consists of those who would abolish the system altogether, replacing it with either another form of governmentally mandated retirement savings or with nothing at all. The second category consists of a more moderate group of critics who would merely propose that certain changes be made to either the benefit structure or the payroll tax. Interestingly enough, both categories identify essentially the same problems with the system, though their
recommendations for solving these problems vary quite dramatically.

The position has been taken in this chapter that social security reform is preferable to abolition. This position is taken on the following grounds. First, the social security program has become a political institution. The idea that it might be successfully dismantled is probably not politically feasible. Second, and more important, the system serves a legitimate need. Widespread economic insecurity among the retired population is a genuine social concern. That the system has been remarkably successful in alleviating this problem is a point few would care to argue. Finally, as was pointed out in the first part of this chapter, those systems offered in place of social security either provide no real improvements over the existing system or impose too high a cost on the working generation. Thus, attention should be focused on proposals for reform rather than replacement of the social security system.

A major theme of this chapter has been that the type of reform proposed by a particular author is a factor of the particular theoretical framework within which that author analyzes the social security program. Those who view the system as an insurance program tend to propose reforms that would bring the benefit structure more closely in line with those of private insurance plans. Those who reject the insurance analogy, on the other hand, offer proposals that
would increase the progressivity of the taxing mechanism. That pattern has proven to be true in this study as well. As will become clear in the following chapter, the position taken in the current study is that though the social security program does evidence certain characteristics of insurance, and though the insurance analogy does bring with it certain social and political advantages, the conceptualization of social security as purely a public insurance system is unfounded. Thus, it is perhaps not surprising that the focus of the current study is upon evaluation of various proposals for reform of the payroll tax rather than the benefit structure.

But this focus is not solely the result of this theoretical conceptualization. This chapter has reviewed proposals that, if implemented, might transform the program into one more closely resembling insurance, thereby perhaps justifying a different conceptual model than the one adopted in the next chapter. Along with these proposals, however, have been presented certain practical issues that very likely would serve as impediments to enactment of the proposed reforms.

Perhaps the most prominent of these impediments is the unfunded status of the system. This is where concerns for the financial stability of the system become relevant in the debate over reforms to improve the equity of the system. Simply put, recent demographic trends cast doubt upon the
ability of an unfunded social security system to ever function as an equitable insurance program in the future, even if the welfare objective of social adequacy is split off into a separate program. In addition, criticisms regarding the potential costs of these proposals, in terms of both dollars and individual dignity, raise some doubts about their political feasibility, even were the insurance principle of individual equity attainable. Thus, the focus of the current study on reforming the revenue side of the system rather than the benefit side is a factor of both the practical implications of the current chapter as well as the theoretical conclusions to be drawn in the one which follows.
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CHAPTER III

THEORETICAL FRAMEWORK FOR THE SOCIAL SECURITY TAX

Introduction

The distributional patterns of the income and social security taxes are in direct conflict with one another. The income tax burden is distributed progressively while that of the social security tax is distributed reggressively. As pointed out in Chapter I, this creates the potential for undermining the objective of progressive income taxation. At no time has this potential ever been greater than it is today, after passage of the Tax Reform Act of 1986 (TRA '86).

In this chapter, a review of the theoretical framework for the social security tax will be undertaken. The official rationale for the social security tax maintains that it is not actually a tax but an insurance premium and is therefore incompatible with the income tax notion that taxes should be assessed on the basis of ability to pay. Critics of this view posit a different rationale. They argue that the insurance analogy is a fallacy; social security is not an insurance system but merely a tax transfer system and should therefore be evaluated by reference to the normal standards of taxation.

The conclusion of this chapter is that both of these
views are overly narrow. The insurance analogy should not be completely discarded, but neither should the social transfer aspect of the system be overlooked. As Eldred [1983] argues, the social security system should be viewed as an insurance system that insures participants against an inadequate level of economic security in the event of retirement, death or disability. Unlike private insurance, however, the emphasis on adequacy in the benefit structure divorces the process of determining benefit levels from consideration of the amount of taxes previously paid. Benefits are based not on previous "contributions" but on participants' previous earnings. The system seeks to replace a portion of the income lost due to retirement, death or disability. The replacement rate is higher for lower levels of income because of the emphasis on adequacy; as pre-retirement (or death or disability) income increases, less needs to be replaced to maintain an adequate level of economic security. Participants desiring a greater level of economic security in their retirement years must make additional provisions for themselves.

Similarly, participants' required current contributions are not determined on the basis of expected future benefits; taxes collected are used to finance current benefits. Thus, current social security tax assessments, like income tax assessments, are a function of revenue needs. As such, there is no reason that the social
security tax and the income tax should be incompatible. An efficient federal tax system requires a coherent, consistent distributional policy, a goal which must be recognized by both the income and social security tax systems.

Social Security as an Insurance System

In contrast to the income tax, the social security tax is not officially rationalized as a tax but as an insurance system. President Franklin D. Roosevelt and Congress established the Social Security System in 1935 in response to the dire economic environment of the Great Depression. The primary purpose of the system was to alleviate the growing problem of economic insecurity, especially among the aged. The political climate of the day was not amenable to welfare, so in order to strengthen the political viability of the system, its supporters opted for a self-financed system, funded by contributions from those who later were to receive benefits [Colby, 1982]. In addition to improving the bill's chances for current acceptance, Roosevelt urged that the system be structured in this way "so as to give the contributors a legal, moral and political right to collect their pensions and their unemployment benefits. With those taxes in there, no damn politician can ever scrap my social security program" [Schlesinger, 1958, quoting Roosevelt, p. 308].

Congress originally patterned the social security
system after private insurance plans. The system emphasized the principle of individual equity; that is, workers were to get out of the system at least as much as they had put into it. Martin [1980] notes that from the start Congress emphasized that the system be "actuarially sound." Contributions were to be made into a large trust fund that would support payment of benefits. In order to let the fund accumulate to an appropriate size, benefit payments were not to begin until 1942, and the Secretary of the Treasury was required to report annually on the "actuarial status" of the account [Martin, 1980].

When viewed from the insurance perspective, ability to pay is not a major concern in analyzing the distribution of the social security tax burden. Instead, as noted above, the proper focus is on individual equity -- are participants in the system receiving equitable benefits relative to their contributions? In this framework, progressivity in the tax structure is perhaps inappropriate. Recall that the social security tax is regressive for two reasons: (1) the ceiling on earnings subject to the tax, and (2) the limitation of the tax base to include only earned income. Both of these characteristics are justified under a pure insurance analysis. Assessing the tax on earnings is considered appropriate because social security insures workers against economic insecurity arising from disability and old age.
Earned income is the only source of income threatened by retirement or disability; interest or investment income is not interrupted due to advancing age [Colby, 1982]. Similar reasoning is used to justify imposition of the ceiling on earnings subject to the tax. Earnings are insured only up to a certain level; assessment of the tax on earnings above the ceiling would violate the principle of individual equity, since benefits would not accrue to earnings above this level [O'Neill, 1980]. Thus, from this view, social security need not conform to the income tax rationale. Ability to pay is an inappropriate framework for analysis of the tax, and the argument that the social security tax conflicts with or undermines the objectives of the income tax system is misleading. The income tax system and the social security tax system are viewed not just as separate systems, but as different kinds of systems. One (the income tax) is a tax which properly should be assessed progressively on grounds of ability to pay. The other (social security) is not really a tax but rather an insurance premium and thus should equitably be charged to the beneficiaries of the insurance benefits.

Social Security as a Tax Transfer System

The insurance rationale for social security has attracted a large number of rather vociferous opponents. Opposition is based primarily on three points: (1) taxpayer "contributions" are involuntary, (2) benefits are only
"tenuously related" to taxes paid, and (3) the system is actuarially unsound.

Critics have made an issue of the involuntary nature of social security [Friedman, 1962; Brittain, 1972; Ferrara, 1980]. Insurance, by its very nature, is argued to be optional; beneficiaries are free to take their chance on the future rather than make themselves worse off now [Brittain, 1972]. Mandatory payments, on the other hand, are representative of taxes and, accordingly, should be distributed pursuant to principles of good taxation (e.g., ability to pay). Brittain [1972] argues that the compulsory nature of social security is particularly inappropriate since the burden falls so disproportionately upon the poor. He asserts that social security, when viewed as a mandatory insurance premium, conveys a patronizing governmental attitude toward the poor; it implies "that the poor are profligate if they prefer to spend their income now and that they must not be allowed to do so" [Brittain, 1972, p. 8]. He notes [1972, p. 8] that "the issue this raises is not whether provision should be made for the future of the poor; the real issue is whether this should be accomplished by a tax on the poor themselves or by some other means." His views clearly lean toward using other means.

A second criticism of the insurance framework is that the link between benefits received and taxes paid is a weak
one. Critics argue that the system is plagued by a conflict between the insurance principle of individual equity (participants receive benefit protection directly related to the amount of their contributions) and the welfare principle of social adequacy (benefits paid will provide all beneficiaries with a minimum standard of living) [Pechman, et al., 1968; Brittain, 1972; Meyers, 1976; Campbell, 1977; Munnell, 1977]. Meyers [1976, p. 26] asserts that the outcome of this conflict tends to favor the social adequacy principle, arguing that "it is only after [the social adequacy] objective is achieved that any remaining funds can be considered available for providing additional benefits based upon individual equity." As a result, he charges, lower income groups, especially those with large families, are undercharged for their benefits while others, such as younger, middle income groups, are overcharged.

Finally, critics charge that if social security is viewed as an actuarially based insurance system, it has long been financially unsound [Pechman, et al., 1968; Buchanan, 1968; Campbell, 1969; Friedman, 1972; Brittain, 1972; Weitzler, 1979; Ferrara, 1980]. Pechman, et al. [1968] note that Congress' original intention to create a large trust fund from which to finance benefit payments was abandoned in 1939. The system since that time has been a "pay-as-you-go" system with current benefits financed almost entirely by current "contributions". Reserves have
not been accumulated to cover the benefit obligations to those already retired and no attempt is apparently being made to accumulate sufficient reserves to cover the pension obligations to future retirees. Indeed, the trust funds of the social security system currently hold reserves of less than one year's benefit payments. The reserve balance at the end of 1986 in the OASDI fund, for example, was only $39.1 billion [Sherman, 1987]. OASDI is by far the largest program in the social security system with 1986 outlays of $181 billion and projected 1987 outlays of $188.5 billion [Sherman, 1987].

Ferrara [1980] charges that this system more closely resembles a Ponzi scheme than an insurance program. Other critics [Pechman, et al., 1968; Brittain, 1972; Okner, 1975] maintain that it is simply a tax transfer system. Taxes are assessed on one generation (workers) to finance benefit payments made to another generation (retirees). The mandatory nature of the tax assessment, the almost total financing of current benefit payments from current tax revenues, and the tenuous relationship between benefits received and taxes previously paid by the beneficiaries are all characteristic of a tax-transfer system rather than an insurance program. Thus, critics charge, the payroll tax should be considered part of the total revenues of the federal government and should be evaluated strictly on its merits as a source of taxes [Pechman, et al., 1968;
Brittain, 1972; Okner, 1975]. "This means that the desirability of changes in payroll taxes should be weighed against changes in other taxes and that social security benefits should be financed by the methods which are most equitable and most conducive to economic growth and efficiency" [Pechman, et al., 1968, p. 75].

Social Security as a Special Kind of Insurance: A Compromise

The case against the insurance framework is a compelling one on the surface, but it may be somewhat overstated. The insurance analogy should not be discarded entirely; there are valid arguments and significant social benefits in favor of maintaining the insurance framework. However, if viewed as social insurance, the system should be viewed as a special kind of insurance system, one significantly different from private insurance. The system is in effect a government program and the determination of how the burden of financing the system should properly be distributed should be made in tandem with the determination of how the burden of other government revenues is to be distributed.

As noted above, the insurance framework for social security has been criticized because, unlike private insurance, social security "contributions" are mandatory. But there seems to be some precedent in other areas for government mandated insurance coverage. For example, most
states now require automobile drivers to maintain liability insurance on their automobiles. The premise seems to be that where the restriction of choice (i.e., to buy insurance or not to buy insurance) is in the public good, it is an acceptable restriction. In the case of auto liability insurance, the public benefits because the risk of suffering an unreimbursed economic loss is significantly diminished by the government mandate. Surely, no one would argue that the premiums paid by drivers are not insurance premiums merely because they are required by government. Buchanan [1969] and Eldred [1981] point out that social security may be an analogous case. There is a genuine collective interest in requiring each individual to make some provision for his or her own retirement. "If an individual fails to do this, support for his subsistence in his old age becomes a general charge against the whole community, given modern standards for poverty relief" [Buchanan, 1969, p. 387].

Critics also charge that the insurance principle of individual equity has been largely displaced by the welfare goal of social adequacy. But Eldred [1983] counters that concern for social adequacy does not invalidate the insurance framework. He argues that social security still falls within the standard definition of insurance provided in all leading textbooks. It applies the law of large numbers to reduce risk; it provides for loss sharing among
participating exposure units; it raises sufficient revenues from participants to cover benefits; and, it transfers risk from the individual to the group. He asserts that social security should be viewed as "a legitimate insurance mechanism that insures all eligible consumption units against an inadequate income resulting from disability, retirement and death" [1983, p. 231]. From this viewpoint, a strong relationship between benefits and contributions is not required. Thompson [1983] notes that this view is not inconsistent with many defined benefit pension plans in the private sector.

Furthermore, Eldred [1983] argues that the assertion that the social adequacy goal has replaced that of individual equity has not thus far proven to be true. He suggests [1981, p. 224] that social adequacy obviously has not become the primary focus of the social security system; "minimum benefits do not now, nor have they ever provided a 'floor of protection' amount sufficient to maintain beneficiaries above the poverty level." Strictly as a welfare system, he asserts, social security must be judged unsuccessful. More important, however, is that the social adequacy goal of social security does not appear thus far to have diminished the individual equity of the system, as charged by Meyers [1976]. Ozawa [1982] reports that social security has for the last forty years provided a much higher rate of return on past contributions to all
participants than would be expected from private annuity plans. The social adequacy aspect of the system has apparently existed alongside the individual equity component with no apparent harm to either.

Finally, in response to the charge that the social security system is actuarially unsound, defenders of the insurance framework argue that the relevant concern is merely that the system have the capacity to pay future benefits [Myers, 1981; Ball, 1978; Eldred, 1983]. Eldred [1983, p. 226] argues that "the fact that the method [of assuring such capacity] is different for private insurance than it is for social insurance does not prove the latter deficient." Reserves are required in the private sector in order to assure that future benefit payments can be met. In the public sector that assurance is provided by the government's ability to levy future taxes. The accumulation of large reserves has not proven necessary to this point to meet benefit obligations.

Thus, it is perhaps inappropriate to abolish the insurance framework entirely. As discussed above, the insurance analogy can survive the primary objections of its critics. Further, it offers certain social and political advantages over the tax-transfer framework. Politically, the insurance framework provides the system with long-term stability and fiscal viability. First, as Roosevelt [Schlesinger, 1959] and Congress [U.S. Congress, 1939]
intended, the public's perception of social security as a contributory insurance program effectively prevents some future Congress from significantly curtailing or abolishing the system. Equally important, the insurance framework forces a degree of fiscal responsibility upon Congress. Buchanan [1969] points out that once the tax-transfer terminology begins to be used, policy makers begin to ask why benefits should be earnings related, why those in need should be excluded, "even if they have not been prior contributing participants in the system," [1969, p. 389] and why other features, like Medicare, could not be added to the tax-transfer system. Buchanan further posits that the tax transfer terminology will lead policy makers and other participants in the social security debate to urge elimination of the self-financing scheme, calling instead for funding benefits from general revenues. The work of Pechman, et al. [1968], Brittain [1972], and Okner [1975] seems to bear this out. Thompson [1983] argues that the latter strategy will in turn invite Congress to succumb to the short-range political temptation to promise more in benefits than is feasible, leading to future reneging on promises and potentially undermining the system. These pitfalls are largely avoided so long as discussion of the system remains couched in the insurance terminology. In the insurance framework, benefit levels are directly tied to the financing capacity of the social security system.
Particularly in a pay-as-you-go system, Congress will find it very difficult to overpromise with regard to benefits. As Thompson [1983, p. 1460] notes, "any benefit liberalization must be linked directly to increases in a highly visible tax." This provides a very strong institutional check against fiscal irresponsibility.

The insurance framework also provides significant social advantages over the tax-transfer rationale. These advantages are of two types. First, because the insurance framework brings long-run stability to the system, participants are provided assurance that they will receive benefits and that these benefits will continue uninterrupted. This is especially reassuring to current benefit recipients, since most recipients have no alternative primary source of income [Thompson, 1983]. Thompson [1983] argues that this has a substantial impact on total societal welfare.

Second, and perhaps more important, the insurance rationale preserves beneficiaries' self-dignity. Thompson [1983] notes that ours is a society in which the acceptance of welfare is frequently perceived as a sign of personal failure. The perception of social security as insurance allows beneficiaries to view their social security benefits not as welfare, but as an earned right [Ball, 1947; Ball, 1978; U.S. Advisory Council on Social Security, 1980; Pechman, et al., 1968]. The common statement of this view
is that beneficiaries are allowed to believe that they have paid for their benefits through previous contributions [Ball, 1947; Thompson, 1983; O'Neill, 1980]. Perhaps a better view, especially in light of Ozawa's [1985] assertion that all beneficiaries receive subsidies (i.e., their benefits exceed any normal return on their contributions), is that beneficiaries have earned the right to retirement benefits by virtue of the fact that they made contributions to finance the retirement benefits of previous generations. Either way, it seems clear that there are substantial social incentives for maintaining the perception of social security as an insurance system.

Still, there is some truth in the criticisms discussed above. The social insurance framework is not a fallacy, but the view of social security as "pure" insurance does appear misleading. Although the principle of individual equity does not appear to have been diminished in the system thus far, social adequacy is clearly a significant objective of the system, as indeed it should be. The function of social security is to insure its participants against economic insecurity due to retirement, death or disability. This requires some degree of social adequacy in the provision of benefits. And with social adequacy must inevitably come some erosion of individual equity. It may be true that over the past forty years all participants have received excess returns on their contributions enabling the system to
simultaneously meet both the goals of social adequacy and individual equity. But this seems to have been primarily a factor of demographics. As Paul Samuelson [1967, p. 88] noted in praise of the social security system, "a growing nation is the greatest Ponzi game ever invented." The ability of the social security system to provide "subsidies", in the form of excess benefits, to all its participants over the past four decades has been directly linked to the tremendous growth in both the labor force and in productivity over that period of time. That this ability has diminished during the past decade is evidenced by the rapid growth of both the tax rate and the earnings ceiling characterizing that time period. Wetzler [1979] warns that we cannot expect the system to continue to be able to provide excess benefits to its participants. He notes [1979, p. 336] that further increases in the payroll tax at the rates which occurred in the 1960s and 70s are politically "out of the question". Further, forecasts of the rate of growth of productivity are not promising. And, of course, the low rate of expected future growth in the labor force has been widely acknowledged [e.g., Wattenberg, 1985]. As a result, he estimates that the real rate of return on contributions can average only 2 to 3 percent in the future, as compared to the roughly 10 percent real rate of return Wetzler estimates is received by current retirees. Thus, it appears inevitable that meeting the goal of social
adequacy will require some sacrifice of individual equity within the system.

This sacrifice of individual equity does not invalidate the insurance analogy entirely, but it does require some transformation of that analogy. Eldred's [1983] assertion that the system should properly be viewed as a social insurance program is correct; however, it should be viewed as a special kind of insurance program, a government insurance program that seeks to achieve the dual goals of income replacement (as opposed to individual equity) and social adequacy. Participants are provided, upon retirement, death or disability, with a pension designed to replace a portion of their lost income, up to a certain level\(^3\). This portion is higher for those whose previous incomes were lower in recognition of the need to provide all participants with some minimum level of economic sustenance. Benefits are thus earned not by comparison to the total amount of prior contributions to the system, but merely by virtue of the beneficiaries having participated in the system. Beneficiaries are entitled to retirement benefits because they themselves have contributed to the economic security of past generations. The amount of their contributions is not important. Conversely, just as current benefits are not tied to the level of past contributions, there is no reason for tying current required contributions to expected future benefits. Current
period contributions should instead be determined in tandem with taxpayers' other required contributions to the government. In general, this calls for cooperation with the general revenue system in determining how the burden of financing the various operations of the government is to be distributed among the populace. As argued previously, the social security system must retain its separate identity from the general revenue system, but this does not prevent the social security system from recognizing, and cooperating to some degree, with the overall goals of the latter system.

In conclusion, the view of social security as a public insurance system does not require that benefits from and contributions to the system be directly related. Certainly, they are not currently so related. The current generation of workers is asked to make certain sacrifices in order to provide for the economic security of the current generation of retirees. In return, these workers will be provided economic security in their own retirement years. In determining the required level of current sacrifice, expected future benefits should not be the relevant concern; it is the sacrifice itself rather than the actual dollar amount of that sacrifice that earns the right to future benefits. Thus, there is no theoretical reason for determining that sacrifice in isolation from other sacrifices required by government. The social security tax should be analyzed as a component of the overall federal
tax system and the distributional goals of that overall system should accordingly be recognized when determining the proper distribution of the income tax burden. There is evidence that the income tax system is not blind to the structure of the social security tax system; the earned income credit established in 1975 appears to be a response to the heavy burden the social security tax places on the very poor [O'Neill, 1980]. It seems only logical that the social security tax should likewise not be blind to the goals of the income tax system. This means that concern for ability to pay should be exhibited in the social security tax structure.
CHAPTER III NOTES

1 Note, however, that proponents of the current system argue that since the benefit structure is heavily weighted in favor of low wage earners the program taken as a whole is progressive.

2 Note that individual equity is not listed as a criterion by Eldred for classification of a program as insurance. However, in the private sector, individual equity would clearly have to be met in a pension insurance program or no one would be expected to buy the insurance. Similarly, in a compulsory public pension program, individual equity would seem necessary for classification as pure insurance, for without this criterion, the program begins to resemble a transfer program and can be considered insurance only in the sense that welfare can be considered insurance.

3 The purpose of the program should be viewed as insuring participants of an adequate amount of economic security in the event of income loss. Earnings above a certain level are not replaced because their replacement is not required to maintain an adequate level of security. Individuals desiring more economic security are responsible for providing for such excess themselves.
CHAPTER III REFERENCES


Ferrara, P.J., Social Security: The Inherent Contradiction (CATO Institute, 1980).


CHAPTER IV

RESEARCH METHOD

Introduction and Description of the Data Source

As discussed in Chapter I, the objectives of this study were twofold. The first objective was to analyze the effects of changes in the income and social security tax systems during the 1980s on progressivity in the combined distribution of income and social security taxes. The second purpose was to evaluate various proposals for reform of the social security tax system on the basis of their impact on vertical and horizontal equity in the combined distribution of income and social security taxes.

These analyses were undertaken based upon actual tax return data. The data source used was the Internal Revenue Service Individual Tax Model File for filing year 1984. The 1984 Tax Model File is the most recent file available. The Tax Model File is a stratified sample from the total population of individual tax returns filed for tax year 1984. It contains records for approximately 80,000 taxpayers, each record providing up to 190 data items pertaining to a particular tax return.

Data Manipulation

The study proceeds in two phases. In phase one, total tax liability for the sample taxpayers was recalculated...
twice, once based upon 1980 tax law and once based upon 1988 tax law (after the rate reductions of the Tax Reform Act of 1986 are fully phased in). The resulting distribution of effective tax rates for the three periods (1984 and the two recomputation periods) was then analyzed to determine the effect of the steady reduction of income tax rates characterizing the 1980s, when combined with the steady increase in social security taxes over that same period, on progressivity in the federal tax system.

Phase two of the study proceeds from the premise that the decline in income tax rates over this period is appropriate. From the standpoint of equity, there would seem to be no timeless optimum level of taxes or degree of progressivity in the tax system. Rather, the determination of the optimal tax level and of the optimal degree of progressivity is a contemporaneous political issue, one which must continually be decided by Congress on behalf of its constituents. In this regard, the Tax Reform Act of 1986 (TRA '86) was presumed to reflect Congress' current determination of the optimal degree of progressivity which should be inherent in the federal tax system. Total tax liabilities for the sample taxpayers were recomputed based upon 1988 income tax law (under TRA '86) in conjunction with various proposals for social security tax reform. The resulting distribution of tax burdens for each of these proposals was then analyzed on grounds of vertical and
horizontal equity. Horizontal equity was measured as the degree of variation in effective tax rates among taxpayers within the same income group. Vertical equity was assessed relative to the progressivity of the TRA '86 income tax law which, as discussed above, was presumed to reflect Congress' perception of the optimal degree of progressivity. The degree of progressivity characterizing the distribution of effective total tax rates associated with each of the proposals for social security reform was therefore compared to that inherent in the income tax system under TRA '86; the proposals were evaluated based upon the closeness of their associated effective tax rate distributions to this "optimal" distribution.

Phase 1: Tax Progressivity in the 1980s

This phase of the study involved recomputing the total tax liability of the sample taxpayers to conform to tax law existing in 1980 and 1988. This required recalculation of both the income tax (regular and alternative minimum tax) and the social security tax. The recalculation was made by applying 1980 and 1988 tax law to the 1984 taxable income data for the sample taxpayers. This of course raises the danger that the taxable income data for 1984 is not representative of the income patterns that would result if the law were actually changed to conform to that of 1980 or 1988. It is recognized that taxpayer income patterns are not independent of the tax structure; indeed the very
purpose of changes in the structure is often to induce changes in income or investment patterns (e.g., the investment tax credit, accelerated depreciation, passive loss limitations, etc.). However, forecasting expected changes in income patterns is quite speculative and has not been attempted in this study.

Recomputation of the Income Tax

To the extent permitted by the data, the income tax liability of each sample taxpaying unit was recomputed to conform to 1980 and 1988 law. This required recalculation of both the regular and alternative minimum tax liabilities for each of the two years. The primary steps involved for each of the two years are described in this section.

1980

Two steps were involved in computing 1980 regular income tax liability: (1) calculating appropriate taxable income, and (2) computing the tax based on such income. The following adjustments to the data were necessary to approximate 1980 taxable income for the sample taxpaying units:

1. Eliminate the adjustment for contributions to individual retirement accounts (IRAs) for taxpayers covered by qualified pension plans. Taxpayers were presumed covered by qualified plans if wages and salaries were their primary source of earned income (i.e., if wage and salary income exceeded self-employment income).

2. Limit the adjustment for contributions to IRAs by non-covered taxpayers to $1,500 (plus $250 for nonworking spouses) or 15 percent of earned income.
3. Reduce total income by the taxable amount of social security benefits included in 1984 total income.

4. Provide an adjustment to gross income for disability income up to $5,200. This adjustment, which must be reduced by the excess of AGI (before the disability adjustment) over $15,000, was in lieu of the credit for the disabled provided under 1984 law.

5. Eliminate the deduction for a married couple when both work.

6. Eliminate the 10 percent of AGI floor on casualty and theft losses.

7. Reduce the 5 percent of AGI "floor" for medical expense deductions to 3 percent of AGI.

8. Eliminate the charitable contributions deduction for nonitemizers.

Note that these adjustments do not fully conform taxable income to 1980 law for the sample taxpaying units. Two noticeable limitations exist. First, the adjustment to limit the deduction for IRA contributions is clearly deficient. There is no way of determining with certainty which sample taxpaying units taking the IRA deduction in 1984 were covered by qualified pension plans and thus would have been ineligible for the deduction under 1980 law. In response to this problem, O'Neill and Thompson [1987] eliminated the deduction for all wage and salary earners. A similar approach was taken in the current study, with some alteration to recognize that those taxpayers for whom wages and salaries are only an incidental source of income are not likely to be covered by a qualified pension plan. Thus, the
IRA deduction was disallowed, in the current study, only for those taxpayers whose 1984 wage and salary income exceeded their self-employment income.

The second limitation of the above adjustment process is related to depreciation methods under 1980 law as opposed to 1984. Assets acquired after 1980 were eligible for ACRS depreciation under 1984 law; this method was not allowed under 1980 law. However, the 1980 system did provide for the use of accelerated depreciation methods so the difference in methods should not seriously distort the estimated distribution of effective tax rates. This seems especially likely since accelerated depreciation methods primarily benefit corporate taxpayers.

The second step in calculating regular tax liability merely involved application of the 1980 tax rate schedule to the recomputed taxable income obtained above. Taxpayers whose credits were limited by 1984 regular tax may be entitled to additional tax credits based on their 1980 regular tax liabilities. Additionally, the credit for the disabled allowed under 1984 law was converted to a deduction for AGI as discussed above. Sufficient information was not available to calculate the work incentive credit (WIN) allowed in 1980 since that credit was repealed prior to 1984. However, the targeted jobs tax credit (TJTC) available in both years was very similar to the WIN credit and should make a good surrogate for that credit.
Certainly, it can be argued that taxpayers taking advantage of the WIN credit in 1980 would be likely candidates to take advantage of the TJTC in 1984 (or to expand their use of the TJTC in the latter year).

The next task involved calculating the add-on minimum tax and alternative minimum tax for 1980. The 1980 add-on minimum tax was a penalty tax required to be paid in addition to the regular tax. The 1980 alternative minimum tax, on the other hand, was paid as an alternative to the regular tax if that alternative was larger than the regular tax. The add-on minimum tax for 1980 was assessed at a 15 percent rate on tax preferences in excess of $10,000 or one-half the regular tax liability, whichever was larger. The following steps were taken to calculate the 1980 add-on minimum tax for sample taxpayers:

1. Adjust 1984 alternative minimum taxable income as follows to approximate the tax base for the 1980 add-on minimum tax:

   i) Back adjusted gross income (net of alternative tax net operating loss) out of the 1984 alternative minimum tax base.

   ii) Add back allowable alternative minimum tax itemized deductions.

   iii) Eliminate the tax preference for the dividend exclusion.

   iv) Eliminate the tax preference item for excess circulation expenditures.

   v) Eliminate the tax preference item for excess mining and development costs.
vi) Eliminate the tax preference item for excess research and experimental expenditures.

vii) Eliminate the tax preference item for the capital gains deduction.

viii) Provide an exemption of $10,000 or one-half the regular tax liability (whichever is larger) in place of the 1984 alternative minimum tax exemption.

2. Assess a 15 percent tax rate against the resulting add-on minimum tax base.

The above adjustments again are not sufficient to exactly replicate the 1980 add-on minimum tax base. Three deficiencies arise: (1) the preference for stock options technically differs for the two years, (2) amortization of rolling stock and of child care facilities is a tax preference item in 1980, but not 1984 (and thus there is no data to compute these preferences), and (3) different depreciation methods were used in the different periods, thus potentially affecting the preference item for excess depreciation in the 1980 recomputation. These deficiencies, however, are not considered significant. The preference item for stock options was virtually the same in the two periods. And though there may have been some differences in the two preferences for accelerated depreciation, the failure to make adjustment in the regular tax calculation for the different depreciation methods required that this adjustment also be ignored in calculating tax preferences. Thus, the primary deficiency is the inability to estimate the preferences for excess amortization of child care
facilities and rolling stock. These were not widely used preferences and their omission should not significantly bias the add-on minimum tax calculations.

The final step in calculating the 1980 income tax liability for sample taxpayers was to calculate the 1980 alternative minimum tax. This was a relatively simple process, involving the following steps:

1. Adjust taxable income as follows to arrive at alternative minimum taxable income:
   
   i) Add back the excess of itemized deductions other than state, local and foreign taxes, medical deductions, casualty losses, and certain estate taxes over 60 percent of AGI (adjusted for the four items above).
   
   ii) Add back the long-term capital gain deduction.
   
   iii) Provide a $20,000 exemption.

2. Apply the alternative minimum tax rate schedule to the above tax base.

Income tax liability for sample taxpayers for 1980 was then computed as the greater of the alternative minimum tax or the sum of the regular tax liability and the add-on minimum tax.

1988

1988 income tax liability was computed pursuant to the rules under TRA '86. This required the following adjustments to the 1984 sample data:

1. Increase the personal and dependent exemptions to $1,950.
2. Eliminate the exemptions for taxpayers aged 65 or older and blind taxpayers. These exemptions were replaced with additional standard deduction amounts.

3. Replace the zero bracket amount with the TRA standard deduction.

4. Increase the medical expense deduction "floor" to 7 1/2 percent of AGI.

5. Eliminate the deduction for sales taxes.

6. Disallow 60 percent of the deduction for consumer interest. Interest deducted on Schedule A, other than mortgage interest, was treated as consumer interest.

7. Reclassify the adjustment for employee business expenses as a miscellaneous itemized deduction subject to the 2 percent of AGI floor.

8. Apply a 2 percent floor to miscellaneous deductions.

9. Reclassify the adjustment for moving expenses as an itemized deduction (not subject to the 2 percent miscellaneous deduction floor).

10. Eliminate the charitable contributions deduction for nonitemizers.

11. Eliminate the adjustment for a married couple when both spouses work.

12. Phase out the adjustment for contributions to individual retirement accounts (IRA's) for taxpayers covered by qualified pension plans with adjusted gross income between $40,000 and $50,000 ($25,000 and $35,000 for unmarried taxpayers). As in 1980, taxpayers reporting income from wages or salaries in excess of self-employment income were presumed covered by qualified plans.

13. Eliminate the dividend exclusion.

14. Eliminate the capital gain deduction.

15. Disallow 60 percent of net passive losses. For this purpose, Schedule E losses were considered passive if tax preferences reported by the taxpayer were in excess of 15 percent of the
Schedule E loss (in absolute terms).


17. Limit tax credits based upon the regular tax liability as computed above.

18. Eliminate the investment tax credit.

19. Increase the earned income credit to 14 percent of the first $5,714 of earned income, decreased by 10% of AGI in excess of $9,000.

Again, the above adjustments did not conform income tax liability precisely to 1988 income tax law. The primary limitations concern the adjustments to limit deductions for consumer interest and passive losses. Sufficient data was not available to differentiate consumer interest and passive losses from business or investment interest and active losses. With regard to consumer interest, the presumption that all interest, other than mortgage interest, was consumer interest clearly overstates the adjustment for personal interest expense. However, assuming that the business and investment interest deductions that are inadvertently disallowed are distributed primarily among upper income taxpayers, this should have the effect of overstating the progressivity of the 1988 income tax, thus biasing the analysis in a conservative direction.

With regard to the adjustment for passive losses, the rationale behind the above assumption, and its effects, are somewhat more complex. The problem is that while most so-called "passive" losses are derived from rents, royalties,
partnerships, S-Corps, estates or trusts (i.e., Schedule E sources), a substantial portion of the losses generated by these entities are presumably "legitimate" and not subject to the passive loss limitations. Identification of those losses that are "passive" and those that are "legitimate" is thus problematic.

The issue was resolved in this study by labelling as "passive" those Schedule E losses accompanied by a "substantial" level of tax preferences. The rationale for this position was founded upon Congress' intention in establishing the passive loss limitations. These limitations were intended to prevent taxpayers from using "tax shelters" to reduce their tax liabilities (Act Section 501, TRA '86). Losses and deductions generated by tax shelters are generally presumed to be artificial in nature, not corresponding to economic reality. Prior to TRA '86, tax deductions considered to be in excess of actual economic losses merely generated tax preference item and an additional tax was assessed when aggregate preference items became excessive relative to the taxpayer's other income tax characteristics. Thus there should be a relationship between so-called "passive" losses and the presence of tax preference items (other than the capital gains exclusion), especially with regard to losses generated prior to the existence of the passive loss limitations. As noted above, in the current study passive losses were identified as
those Schedule E losses accompanied by tax preferences (other than the capital gains exclusion) in excess of 15 percent of the absolute value of the net Schedule E loss.

Unlike the adjustment for consumer interest, it seems unlikely that the identification of passive losses in the current study was biased in such a way as to uniformly overstate the adjustment for passive losses. Indeed, it seems more likely that passive losses may have been understated in the aggregate. The effects of such an understatement in the current analysis are somewhat complicated. With regard to the analysis of 1988 income tax progressivity, there should be no effect. This is because passive activity losses were not allowed to reduce the measure of a taxpayer's economic income (as will be discussed later). As a result, identification of a loss as passive increased both the taxpayer's income tax liability and the measure of that taxpayer's economic income; the effective tax rate was not substantially affected. Thus, the effects of misidentification of passive losses should not be reflected in the 1988 progressivity analysis. Instead, because the passive loss limitations were not relevant in calculating a taxpayer's 1980 and 1984 income taxes, the effects of underestimating passive losses should appear in the analysis of tax progressivity for those years. Identification of a loss as passive still increased the taxpayer's economic income for those years, but not the
level of income tax liability. Assuming that passive losses are distributed primarily among upper income taxpayers, estimated progressivity in the 1980 and 1984 analyses is likely overstated to the extent that passive losses are understated. Given the premise of the study, any bias resulting from these effects on the analysis across the three periods should be in a conservative direction².

As with the 1980 recalculations, the next task was to calculate alternative minimum tax liability under 1988 law. This required the following adjustments to 1984 alternative minimum taxable income:

1. Make the necessary adjustments to regular taxable income as discussed in items 1 through 19 above.
2. Eliminate the tax preference item for the capital gain deduction.
3. Eliminate the tax preference item for the dividend exclusion.
4. Disallow the 40 percent of passive activity losses allowed in computing regular taxable income.
5. Add back 40 percent of consumer interest deductions allowed against the regular income tax base.
6. Add back itemized deductions for state and local property taxes and for miscellaneous expenditures.
7. Phase out the AMT exemption for taxpayers with alternative minimum taxable income in excess of $150,000 ($112,500 for single taxpayers).
8. Increase the alternative minimum tax rate to 21 percent.
The resulting estimate of the alternative minimum tax is subject to a number of limitations. The TRA of '86 provided for a number of additional tax preference items not included in the 1984 calculation. The most significant of these would seem to be tax-exempt interest income on private activity bonds. Additionally, the Act provides alternative minimum tax adjustments or preferences for charitable contributions of appreciated property, installment sales of dealer property and certain transactions for which the completed contract method is used. The 1984 Individual Tax Model contains no data on any of these items. Further, the potential inaccuracies in measuring consumer interest expense and net passive losses discussed above plague the alternative minimum tax calculation as well. Assuming these preferences are distributed primarily among the wealthy, these limitations likely result in an understatement of progressivity in the analysis. However, these preferences are not expected to be widespread among any class of taxpayers and any resulting bias should therefore be insignificant.

As in the 1980 recalculation, the total income tax liability for the sample taxpayers under 1988 law was calculated as the greater of the regular tax liability or the alternative minimum tax liability.

Recomputation of the Social Security Tax

Recalculation of the social security tax for the years
1980 and 1988 was a relatively routine process. The process involved essentially two steps:

1. Application of the appropriate earned income ceiling, both to wage and salary income (in which case, the payroll tax was recalculated) and to Schedule SE (in which case the self-employment tax was recalculated)\(^3\).

2. Application of the appropriate tax rate.

The social security tax was recalculated under dual assumptions regarding the incidence of the employer portion of the tax. Under the first assumption, the employer tax was presumed borne entirely by employers. The alternative assumption was that the employer tax is shifted entirely to employees.

**Summary**

The result of these recomputations was to yield six sets of tax liabilities for the sample taxpayers, reflecting their total tax liabilities (regular income tax, alternative minimum tax and social security tax) under 1980, 1984 and 1988 tax law for each of the two assumptions regarding incidence of the employer portion of the social security tax. From these, six distributions of effective total federal tax rates were constructed based upon the income tax "brackets" in effect prior to TRA '86. The analysis was then focused upon progressivity within each of these distributions, and, most importantly, upon trends in progressivity across the three periods of time.
Phase 2: Proposals for Social Security Reform

The focus of the second phase of the study was on the overall distributional effects of various proposals for social security reform. These effects were analyzed within the framework of existing (i.e., 1988) tax law. Therefore, the study proceeded by recomputing the tax liabilities of sample taxpaying units assuming 1988 income tax law in conjunction with the various social security reform proposals of interest. As above, the recomputations were made under dual assumptions regarding the incidence of the employer's portion of the social security tax.

As discussed in Chapter 1, five basic reform proposals were considered in this study: (1) provision of exemptions to the social security tax base, (2) elimination of the ceiling on taxable earnings, (3) provision of exemptions for taxpayers with earned income below a certain phase-out level, (4) graduation of social security tax rates, and (5) expansion of the social security tax base to include "unearned" income. These proposals were analyzed both individually and in various combinations with one another (see Table 1).

Recall from the discussion in Chapter III that current social security benefits are funded primarily from current contributions. Since current benefit levels can reasonably be assumed inflexible, the evaluation of social security reform proposals is extremely sensitive to any
revenue effects which may be associated with these proposals. In this regard, manipulation of the tax rate applied to the "post-reform" social security base was used to maintain a constant level of revenues. Determination of the appropriate post-reform social security rate involved a two-step process. First, social security payroll taxes paid by each sample taxpayer under 1988 tax law were multiplied by the sample weighting factor associated with that taxpayer. The sample weighting factor indicates the number of taxpayers in the taxpaying population represented by the observed sample taxpayer. Multiplication by the weighting factor was necessary because the IRS Tax Model File is a stratified sample of tax returns filed in 1984.

Aggregation of the weighted social security taxes paid by each sample observation yielded an estimate of total direct worker "contributions" to social security under 1988 law. Since employers are required to match these "contributions", this also provided an estimate of total social security taxes assessed on employers.

The second step involved application of essentially the same process to the "post-reform" social security tax base for each sample taxpayer under each of the proposals for social security reform. The "post-reform" payroll tax rate necessary to maintain a consistent level of revenues under each proposal was then calculated by dividing estimated pre-reform payroll taxes into the estimated post-reform payroll
tax base for each reform proposal. The necessary post-reform self-employment tax rate under each reform proposal was presumed to be twice the payroll tax rate in order to maintain consistency with current law.

Provision of Exemptions. The most basic reform proposal is that calling for provision of exemptions from the social security tax base. The current study analyzed the effect of providing a $1,950 personal exemption for each taxpayer and spouse upon the distribution of effective federal tax rates. Exemptions were allowed only once for each family unit, so that a taxpayer whose spouse had earnings subject to the social security tax was not allowed to use the spousal exemption. Though it would perhaps be proper to provide exemptions for dependents as well, this option was not considered in this study because the data was not sufficient to allow a determination of whether the dependents had earnings subject to social security taxes. Without this information, it was not possible to make adjustments to prevent the "doubling" of exemptions.

Exemptions could be used to reduce the social security tax assessed directly on employees without reducing the tax assessed on employers. That is, exemptions could be allowed against the employee tax base but not against that of employers. This might be desirable for administrative purposes. For example, it might be difficult to allocate the exemption among different employers of a taxpayer
working more than one job. Exemptions were not offset against the employer tax base in the current study.

Removal of the Ceiling. The second major reform proposal analyzed in this study was the elimination of the earnings ceiling. This proposal was analyzed both singularly and in conjunction with the provision of exemptions. The ceiling was eliminated for both the employee and employer portions of the tax. It was also eliminated in the computation of the self-employment tax.

Phasing out Exemptions. A third reform proposal calls for providing exemptions from the social security tax base, but only for those taxpaying units with earned income below a certain level. The exemption would be phased out as earned income exceeds this level in much the same way as exemptions are phased out in calculating income tax liability under TRA '86. This proposal was analyzed solely in conjunction with the elimination of the earnings ceiling discussed above. Since no a priori rationale exists for determining the proper level to begin phasing out the exemption, the phase-out began in this analysis at an earned income level of $43,800, the earnings ceiling in effect for 1987. The phase-out began as earned income for the taxpaying unit exceeded this level, so that a married couple's exemptions were phased out beginning at the same income level as a single taxpayer.

There also is no a priori rationale for determining the
appropriate rate at which to phase the exemption out. In this study, the exemption was reduced by 20 percent of the amount by which earned income exceeded $43,800. This phase-out rate was chosen in order to approximate the income range over which exemptions are phased out in calculating taxable income under TRA '86.

Graduating Tax Rates. The fourth reform proposal of interest in the current study was that calling for graduated social security tax rates. Again, no a priori reasoning exists for determining the proper degree of graduation to introduce into the rate schedule. As with the other proposals for which this problem exists, the income tax law was looked to for guidance. Mirroring the income tax rate schedule, a two rate schedule was created with income below a certain "cut-off" level taxed at a lower rate than income above that level. The cut-off levels were the same as those in the 1988 income tax rate schedule ($29,750 for married taxpayers, $17,850 for single taxpayers, and $23,900 for taxpayers filing as heads of household). Necessary tax rates were determined as described above, with the additional stipulation that the bottom rate was required to be equal to 15/28ths of the top rate. Thus, the social security rate structure under this reform proposal was designed with two criteria in mind. First, revenues must be maintained. Second, the social security rate schedule must be characterized by the same
degree of progressivity as is inherent in the income tax rate schedule. Like the proposal to provide exemptions for taxpayers with earnings below a certain phase-out level, the graduated rate proposal was always analyzed in conjunction with the elimination of the earnings ceiling. In addition, it was analyzed in combination with the limited exemption proposal (i.e., provision of exemptions to taxpayers with earnings below the phase-out level). The graduated rate structure and elimination of the earnings ceiling were applied to both the employees' and employers' portions of the tax; exemptions were allowed only against the employees' tax base, consistent with the reasoning discussed previously.

Expansion of the Tax Base. The final proposal analyzed was expansion of the social security tax base to include other sources of income. Two alternatives for expanding the base were considered. First, interest and dividends were brought into the tax base. As a second alternative, the tax base was expanded to include all gross income as determined for income tax purposes. Other items, such as tax-exempt interest, could also be included in the social security tax base, but were not considered due to lack of data.

Base expansion clearly would have little practical effect absent elimination of the income ceiling. Thus, both alternatives discussed above were analyzed in conjunction with this elimination. Additionally, the base expansion
alternatives were analyzed in combination with the limited exemption and graduated rate proposals. Consistent with the current self-employment tax, income other than salaries and wages was taxed at the combined employee and employer rates. As discussed above, the exemptions were applied only against the employee tax base. Finally, the appropriate tax rates were determined in accordance with the method described earlier.

Summary. In summary, phase 2 of the study consisted of an analysis of the effect of various social security reform proposals on equity in the federal tax system. The five basic reforms of interest in the study yielded 14 proposals for social security reform, as illustrated in Table A. Analysis of these proposals focused on their effects on the distribution of effective federal tax rates. Specifically, the analysis focused on the impact of each of the proposals upon vertical and horizontal equity in the combined distribution of income and social security taxes. The remainder of this chapter discusses the techniques used for measuring these parameters of this combined distribution.

Data Analysis

As discussed above, the focus of the current study is upon equity in the federal tax system. In phase 1 of the study the effects of tax law changes in the 1980s upon vertical equity in the federal tax system were analyzed. The second phase concentrated on the effects of certain
proposed changes in the social security tax on both vertical and horizontal equity in the federal system.

Horizontal equity in a tax system requires that taxpayers in equal circumstances (i.e., with equal ability to pay) pay the same amount of tax. Vertical equity requires that "suitable distinctions" be made between taxpayers in unequal circumstances when assessing tax burdens [Due and Freidlaender, 1973].

Three basic problems arise in an analysis of these two types of equity. First, it is not clear how to measure a taxpayer's ability to pay taxes. Though many factors (e.g., family size, marital status, etc.) are arguably relevant in assessing whether taxpayers are in "equal circumstances", the primary factor chosen in this study was income. A second problem concerns measurement of horizontal and vertical equity. Though it is relatively easy to assess whether horizontal equity or vertical equity exists at a particular point on the income scale, it is much more difficult to make this assessment for an entire tax system. It is even more difficult to compare two different tax systems on this basis. Finally, and most importantly, the problem arises regarding the proper degree of vertical and horizontal equity that should be inherent in a tax system. As noted above, the classification of taxpayers on the basis of ability to pay is an imperfect process. Thus, even in a perfectly equitable tax system, we would expect
some variation in tax burdens borne by taxpayers in a particular income class. The difficulty arises in determining how much variation is acceptable. Determining the appropriate level of variation in tax burdens borne by taxpayers in different income classes is an even greater problem. The following sections address these issues.

Taxpayer Classification

Measurement of both vertical and horizontal equity requires that taxpayers be classified into somewhat homogeneous groups based upon their ability to pay taxes. Several factors might be relevant in the classification process. For example, ability to pay might be affected by income, wealth, family status or health considerations. In the current study, classification was based upon income and family status.

Income was chosen as a classificatory factor because it provides the most direct indicator of a taxpayer's ability to pay taxes [Pratt, et al., 1985]. Most theoretical discussions of ability to pay focus on the Haig-Simons definition of income, which, broadly stated, defines income as consumption plus accumulation [Simon, 1936; Haig, 1959; Goode, 1977; Anderson, 1985; Hall, 1986]. This definition is considered deficient in the current study, however, because it encompasses all accretions in wealth, including unrealized gains and certain imputed income items (e.g., imputed rents for homeowners). Since an important
consideration in determining a taxpayer's ability to pay is accessibility of funds [Sommerfeld, et al., 1981], it seems inappropriate to include unrealized gains and imputed income in the tax base; although these items may increase a taxpayer's wealth, they do not increase his or her ability to pay taxes until actually realized.

A more appropriate measure of ability to pay is "expanded income", defined as adjusted gross income (AGI) for income tax purposes plus tax preference items excluded from AGI less investment interest to the extent not in excess of investment income [IRS, 1981; Okner, 1979]. Okner asserts that this measure is "as close as it is possible to get to a taxpayer's net economic income based solely on the information reported on his income tax return" [Okner, 1979, p. 12]. Still, two limitations exist. First, expanded income does not include tax-exempt income, such as municipal interest. Second, expanded income, calculated from the information available on a taxpayer's tax return, is reduced by certain tax losses that may not be representative of economic reality. The passive loss limitations of the Tax Reform Act of 1986 represent official Congressional recognition that many tax losses reported on Schedule E do not reflect true economic losses. For example, residential rental activities frequently yield tax losses for landlords though the rental receipts cover out-of-pocket costs and the underlying property retains its
economic value.

A meaningful attempt to measure a taxpayer's ability to pay taxes would require some adjustment to the expanded income measure for these noneconomic losses. The Congressional Budget Office [1987] attempted to make this adjustment by eliminating Schedule E losses entirely from the economic income measure. This, however, is an overreaction, omitting many legitimate Schedule E losses from the expanded income measure. In the current study, expanded income was measured as described above except that Schedule E losses deemed to be passive were ignored. Identification of these passive losses was based upon the level of tax preferences accompanying Schedule E losses as described previously. Where a loss was deemed passive, the expanded income measure was increased by the excess of the absolute value of this loss over reported tax preferences. Only the excess was added back because preferences are already added to AGI in arriving at the original expanded income measure. (The assumption is that the preferences are directly associated with the Schedule E loss activity).

This measure is still an imperfect representation of ability to pay. Perhaps the primary limitation is a continued omission of tax-exempt income. But the passive loss adjustment is also deficient as discussed previously. The effect of the first limitation, assuming that tax-exempt income is disproportionately distributed among upper income
taxpayers, should be to overstate the estimated progressivity of the tax system in all three years under analysis. With respect to the second limitation, the effect would likely be to overstate progressivity in the 1980 and 1984 analyses, but not the 1988 analysis. The first bias is of a conservative nature and therefore not worthy of concern. The second, however, is somewhat perplexing. Overstatement of estimated progressivity in 1980 and 1984, but not 1988, may lead to an erroneous perception of declining progressivity between the first two periods and the latter or to overstatement of such a decline. Alternatively, where progressivity is estimated to increase in 1988, the magnitude of such increase may be understated. It should be noted, however, that these problems persist in even greater magnitude when no adjustment is made for passive losses, as in the typical "expanded income" measure. Thus, as long as the adjustment is not excessive (as in the CBO study), the analysis should yield improved accuracy.

The analysis of horizontal equity is also likely to be affected by the above limitations. With regard to tax-exempt income, to the extent that such income is not uniformly distributed among taxpayers in a particular adjusted expanded income group, any measure of horizontal equity is likely to be overstated as well. The same is true to the extent that unidentified passive losses are not
uniformly distributed within income groups. The effects of these overstatements, however, should not be significant because they will plague both pre- and post-reform measures equally; analysis of the improvement in horizontal equity resulting from a particular reform proposal should not be impaired.

There appears to be no a priori theoretical rationale for determining the differentials of expanded income at which taxpayer groups differ with respect to ability to pay. In the current study, sample taxpayers were classified into adjusted income "brackets" or groups consistent with the classification scheme used in the income tax system prior to TRA '86. Thus, taxpayers were classified into one of 17 expanded income groups as illustrated in Table B. The first of these groups consists of those taxpayers whose adjusted expanded income was less than zero. The next 15 represent the 15 tax brackets in effect under pre-TRA '86 income tax law. The 17th group was added to further differentiate very high income taxpayers.

In addition to classification based upon expanded income, sample taxpayers were further classified on the basis of family status. Consistent with income tax law, taxpayers were first classified into two groups generally perceived to be characterized by differing abilities to pay: married taxpayers filing jointly and single taxpayers.
Since these taxpayers make up approximately 90 percent of all tax returns filed [Hall, 1986], elimination of sample taxpayers with other filing statuses should not detract from the analysis.

A final classification procedure involved categorizing taxpayers within each of the two broad family status groups into those with dependents and those without. This resulted in 4 sets of sample taxpayers, each set consisting of 17 expanded income groupings of taxpayers within a particular family status class. This should enable a meaningful analysis of the equity effects of various tax law changes and proposed changes while still retaining a manageable number of groups.

Measurement - Vertical Equity

Vertical equity requires that taxpayers with greater ability to pay should pay not just more tax in absolute terms, but more tax relative to their lesser able counterparts if all taxpayers are to experience equal burdens. Progressive taxation is generally agreed to be necessary to promote vertical equity. Two problems arise once the discussion leaves the theoretical realm, however. First, it is not entirely clear how progressivity is to be measured. This is particularly troublesome when the goal is to compare the progressivity of two tax distributions, as is the case in the current study. It is relatively simple to determine if a tax system is progressive at a particular
point (i.e., locally). Progressivity exists at that point if the average tax rate increases with pre-tax income at that point. It follows that the progressivity of two tax systems can easily be compared at a given point. However, since the two tax systems consist of an infinite number of such points (17 of which have been arbitrarily selected for analysis in the current study), such local measures of progressivity are useless in an overall comparison of the progressivity of the two systems.

Several global or overall indices of progressivity have been developed in the literature [Pechman & Okner, 1974; Reynolds and Smolensky, 1977; Khetan & Poddar, 1976; Atkinson, 1970; Suits, 1977]. None of these measures appears to be theoretically superior to the others, but the Suits index [Suits, 1977] is the one most frequently used and is therefore selected for use in the current study.

The Suits index is based on a variant of the classical Lorenz curve. Rather than measure the cumulative percentage of total income relative to the cumulative percentage of families (as in the Lorenz curve), it provides a measure of the relationship between the cumulative percentage of the total tax burden and the cumulative percentage of total income (total adjusted expanded income in this study). Graphically, it can be illustrated by reference to Figure 1. A proportional tax, in which all income is taxed at the same rate, would yield the 45 degree diagonal AB. Curve
the relationship between the total area under the diagonal AB and the total area under the Lorenz curve (ACB or ADB in Figure 1). If the total area under the diagonal AB is defined as \( K \) and the area under the Lorenz curve is defined as \( L \), the Suits index can be expressed as:

\[
S = \frac{(K - L)}{K} = 1 - \left(\frac{L}{K}\right).
\]

Thus, for a proportional tax, where \( K = L \), the value of the Suits index is zero. Where \( K \) is greater than \( L \), as in a progressive tax system, the index is positive and where \( L \) is greater than \( K \), as in a regressive system, the index is negative. The index ranges from -1 to +1, with -1 indicating extreme regressivity, +1 extreme progressivity and 0 indicating proportionality.

Statistically, parameter \( K \) in the above analysis is always 5,000 since the triangle under diagonal AB has base and altitude of 100. Parameter \( L \) can be measured as follows:

\[
L = \sum \frac{1}{2} \left[ (T_i + T_{i-1})(Y_i - Y_{i-1}) \right],
\]

where

- \( T_i \) = the accumulated percentage of the tax burden for family status/income group \( i \),
- \( Y_i \) = the accumulated percentage of adjusted expanded income in family status/income group \( i \), and
- \( n \) = the total number of expanded income groups.

Thus, the Suits index becomes:

\[
S = 1 - \frac{L}{5,000}.
\]

Like determination of the appropriate tax rate under
Thus, the Suits index becomes:

\[ S = 1 - \frac{L}{5,000}. \]

Like determination of the appropriate tax rate under the various reform proposals, calculation of the Suits index in the current study was complicated somewhat by stratification in the IRS Tax Model File. Total taxes and total income for each sample taxpayer must be weighted in determining the accumulated tax burdens and income levels used in the index. Individual observations were weighted by the portion of the overall taxpaying population represented by each (provided on the tape). The above components of the Suits index became, in this study, weighted accumulated total taxes and total income, reflecting the stratification of the sample.

The Suits index is useful in that it provides a quantitative measure of the degree of progressivity of a tax system. However, it is limited in that this measure communicates only the average progressivity of a tax system across the entire income range. It does not fully reflect the individual characteristics of a particular tax system; for example, a tax system could be highly progressive at the lower end and highly regressive at the upper end, thus yielding a Suits index of near 0. Interpretation of the index would likely lead one to erroneously conclude that the tax was proportional, or nearly so, a highly misleading impression.
For this reason, another method is necessary for comparative analysis of tax systems. Perhaps the most useful method is simply to compare the distributions of effective tax rates of the two systems graphically. This approach was used in conjunction with the Suits index in the current study.

The second problem associated with the analysis of vertical equity concerns determination of the proper degree of progressivity in a system. This is a political issue and no attempt has been made to resolve it in this paper. Rather, as discussed previously, the degree of progressivity inherent in the income tax system after TRA '86 was presumed to be optimal. In summary, analysis of vertical equity in phases 1 and 2 of the current study proceeded in two steps. First, the average overall progressivity of the alternative tax distributions was compared using the Suits index. In the second step, a graphic comparison of the various tax distributions being analyzed was undertaken in order to insure that the Suits analysis did not lead to erroneous conclusions.

Measurement - Horizontal Equity

Horizontal equity requires that taxpayers in equal circumstances pay equal amounts of tax. Thus, a useful measure of horizontal equity is the variation of effective tax rates within a family status/income group [White and White, 1965; Brennan, 1971; Ehrenburg, 1975, Anderson, 1985;
The coefficient of variation is thus a useful measure of horizontal equity for a given income group. The coefficient of variation is defined as follows:

\[ CV_j = \frac{SD_j}{R_j} \times 100, \]

where:

- \( CV_j \) = the coefficient of variation for family status/income group \( j \),
- \( SD_j \) = the standard deviation of the effective federal tax rates for family status/income group \( j \), and
- \( R_j \) = the mean effective federal tax rate for family status/income group \( j \).

Anderson [1985] notes that the coefficient of variation is well suited as a measure of horizontal equity because it is scale free. Thus, it allows comparisons both within and between groups of taxpayers having different levels of income or taxes. The use of effective federal tax rates in this study, rather than total taxes as used in Anderson [1985], should further enhance comparability by minimizing the dispersion which might arise due to the range of expanded incomes in an expanded income group [Hall, 1986]. This is particularly a concern in this study given the broader range of incomes included in groups 0 and 17 relative to groups 1-16 (See Table 2).

Of course, analysis of the coefficient of variation (CV) alone is subject to the limitation that only localized measures of equity can be compared. To compare different tax distributions, a more general measure of equity must be obtained. In this study, the overall horizontal equity
effects of changes in tax distributions (e.g., arising from a particular social security reform) was measured by reference to the weighted average change in the CV across all income groups. This weighted average was computed as follows:

\[ WA_j = \frac{\sum N_j \times (CV_{j1} - CV_{j0})}{\sum N_j} \]

where

- \( N_j \) = the number of taxpayers in family status/income group \( j \),
- \( CV_{j1} \) = the coefficient of variation for family status/income group \( j \) under the current distribution of taxes, and
- \( CV_{j0} \) = the coefficient of variation for family status/income group \( j \) under the pre-reform distribution of taxes.

A similar procedure was used to measure the average change in CV across family status categories for each reform proposal.

As with the Suits index of progressivity, the weighted average change in the coefficient of variation is merely an overall average measure of the change in horizontal equity and may not reflect inconsistencies among expanded income groups within a family status category. In recognition of this limitation, careful attention must be paid in the analysis of local change measures. Unlike the analysis of progressivity above, the horizontal equity analysis is not plagued by the difficulty of determining the optimal level of "equity"; for practical purposes, a lower coefficient of variation is always considered more equitable than a higher one.
of "equity"; for practical purposes, a lower coefficient of variation is always considered more equitable than a higher one.

In summary, the analysis of horizontal equity in phase 2 of the current study proceeded by measuring the change in the variation of effective tax rates within each family status/adjusted expanded income category. These local measures of change were analyzed to determine whether any obvious patterns were exhibited across adjusted expanded income groups within a family status category (e.g., decreased variation in lower income groups, accompanied by increased variation in high income groups, etc.).

These local measures of the horizontal equity effect of each proposal were then averaged across income groups within each family status category and then across family status categories. The resulting measures provide an indication of the overall average effect of a particular tax reform upon horizontal equity in the federal tax system.
CHAPTER IV NOTES

1 Critics of this view may argue that the income tax is not the only component of the federal tax system and that the degree of progressivity which results when the incidence of all federal taxes is measured could just as easily reflect Congress' determination of the optimal degree of progressivity. There are, however, two shortcomings associated with this view. First, measuring the incidence of all federal taxes is a very imprecise process; there is no reason to expect Congress to fully comprehend the degree of progressivity inherent in all federal taxes, much less to determine that this is the optimal degree of progressivity. Second, and more important, progressive taxation is a product of the concern for the principle of ability to pay. The income tax is currently the only federal tax assessed on grounds of ability to pay. Other federal taxes are not founded on concerns for ability to pay and thus should not be expected to reflect Congressional consideration of the optimal degree of progressivity.

2 To the extent passive losses are understated, progressivity in the 1980 and 1984 (but not 1988) income tax distributions should be overstated (since adjusted expanded income gross income will be understated). As a result, any estimate of increased progressivity under 1988 law would be understated. As will become clear in Chapter V, such a bias would merely imply that the results obtained in the current study were conservative.

3 In applying the first step, the earned income ceiling was applied based on the allocation of earned income between spouses as reported on Schedule W.

4 These administrative problems need not arise with respect to the exemption against the employee tax base. The exemption, like the current earned income credit, could easily be implemented through the taxpayer's annual income tax return.

5 Administrative concerns make it infeasible to provide exemptions against the employers' social security tax base. These concerns will be recognized here as well.
6 The social security exemption was phased out over an income range of $9,750 in this study. The income tax exemption is phased out over an income range of $10,920 under TRA '86.

7 Several filing statuses are provided under income tax law - married filing jointly, single, married filing separately, head of household, and surviving spouse - but the two primary tax rate schedules in use are those for single and MFJ taxpayers.
CHAPTER IV REFERENCES


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CHAPTER V

RESULTS

Analysis of Progressivity in the 1980s

Differences Among Taxpayer Groups

The results of the first phase of the analysis are summarized in Tables 3 and 4 (Appendix B). It is clear that there are some remarkable and interesting differences in the distribution of the tax burden among the four taxpayer groups identified in the study. Some of these differences are perhaps surprising. For example, Table 3 reveals a substantial difference in the progressivity of the income tax distribution among head-of-household (HOH) filers relative to other taxpayer groups. This difference becomes more pronounced in 1988 after passage of the Tax Reform Act of 1986 (TRA 86). The greater degree of progressivity characterizing the HOH distribution is a factor of the relatively greater significance of the earned income credit (expanded by TRA 86) for this group rather than any unusual steepness in the tax structure.

Other differences are not so surprising. For example, the tax rate schedule for single taxpayers is essentially the same as that for married taxpayers filing jointly, but these rates are applied at lower levels of income for single taxpayers. Thus, it is not surprising that the
distribution of income taxes was more progressive for single taxpayers than for married taxpayers in 1980 and 1984. In 1988 the combination of a compressed rate schedule and expanded personal exemptions (which benefit married taxpayers with families much more than they benefit single taxpayers) increase progressivity in the married-with-family (MWF) group to a point slightly above that in the single taxpayer group. Single taxpayers still face a more progressive distribution of income taxes than do their married counterparts who do not have children.

Table 4 provides a summary of the progressivity measures for the combined distributions of social security and income taxes (referred to hereafter as the combined distribution of taxes). Two general observations emerge from Table 4. First, the social security tax substantially reduces progressivity in the combined tax distribution, as will be discussed in more detail later. Second, the social security tax alters substantially the relationship between progressivity in the single taxpayer group versus that in the married, no family (MNF) group. Under the assumption of no shifting of the employer social security tax (incidence assumption 1), the differential in progressivity between the two groups is substantially compressed. Under the assumption that the employer tax is fully shifted to labor (incidence assumption 2), the differential is actually reversed; the MNF distribution becomes slightly
more progressive than the single taxpayer distribution.

The more important relationships to the current study, however, are the interyear relationships. The primary focus in phase I is on the change in progressivity from 1980 to 1984 to 1988 in both the income tax and combined tax distributions. The individual group analyses, though interesting, are of practical significance only if they are inconsistent with the overall total sample trends. Tables 3 and 4 indicate that the patterns within the individual groups are generally quite consistent with the interyear patterns of the total sample analysis. The following discussion is therefore centered primarily on the total sample figures. Intergroup or intragroup comparisons are highlighted only when inconsistent with the total sample figures.

**Interyear Patterns: Income Tax**

Table 3 shows that the overall distribution of the income tax burden is slightly less progressive under 1984 law than under 1980 law. The overall decline is only in the neighborhood of 2 percent, however, which is far less than many political and economic commentators would have us believe. Further, this trend differs for married taxpayers versus single taxpayers. For married taxpayers as a class, the 1984 distribution is actually slightly more progressive than 1980, the Suits index increasing by about 1 percent. Thus, the overall decline in progressivity in the income
tax system appears to have been driven by the single taxpayer distributions, particularly the HOH distribution. Progressivity in the HOH distribution declined by 12.5 percent from 1980 to 1984. This is not surprising since the Economic Recovery Tax Act of 1981 (ERTA), which was fully phased in by 1984, provided generous reductions in tax rates across the spectrum of income, but left the earned income credit (EIC) unchanged. Thus, ERTA effected a larger reduction in effective tax rates for higher income taxpayers than for those taking advantage of the EIC; progressivity naturally declined. The relatively minor size of the HOH taxpaying population, relative to the total population of taxpayers, explains the rather modest decline in total progressivity resulting from the 1981 Act.

The effect of the Tax Reform Act of 1986 (TRA 86) on the distribution of the federal income tax burden is quite interesting. Table 3 indicates that, contrary to the arguments espoused by many commentators, progressivity in the income tax distribution increased dramatically as a result of the '86 Act. The compression of the rate schedule effected by the Act was apparently offset by the expansion of personal exemptions and the standard deduction and, of course, the tax base itself, resulting in a sharp increase in progressivity among all four taxpayer classifications. Additionally, the Act provided for a substantial increase in the EIC, making this growth in progressivity especially
acute within the HOH group.

A review of Graph 1 (Appendix C) confirms that the above analyses based on the Suits index are not misleading. Graph 1 presents the total sample weighted average effective income tax rates under tax law in effect in 1980, 1984 and 1988. Graph 1 clearly reveals that the decline in effective income tax rates from 1980 to 1984 was relatively larger for higher income groups. In contrast, from 1984 to 1988, effective income tax rates declined relatively more for lower income groups. No unusual aberrations appear.

In sum, the net result of the decade's changes in the income tax system has been a substantial increase in progressivity within that system for all taxpayer groups. On average, the distribution of income taxes experienced about a 25 percent increase in progressivity among married taxpayers and a 26 percent increase among single taxpayers. Progressivity in the overall (i.e., total sample) distribution of income taxes increased by about 24 percent from 1980 to 1988. The results are essentially the same under either assumption regarding incidence of the employer social security tax although under the assumption of full shifting, the income tax distribution is slightly more progressive. This is because more income is attributed to wage and salary workers under the full shifting assumption, but this additional income is not subject to the income tax.
Intergyear Patterns: Combined Social Security and Income Taxes

It is not surprising that the combination of a regressively distributed tax (the social security tax) with a progressively distributed one (the income tax) yields a tax distribution less progressive than that of the progressive tax by itself. What is perhaps surprising in this case is the magnitude of the effect. Table 4, and graphs 2, 3 and 4 illustrate the extent to which the social security tax depresses progressivity within the federal tax distribution. Under 1980 tax law, the combined distribution of social security and income taxes for the total taxpayer sample is 37.6 percent less progressive, under the assumption of no shifting of the employer tax, than the distribution of income taxes alone. Under the assumption that employer taxes are fully shifted, the combined distribution is 57.3 percent less progressive than the income tax distribution. For 1984, the combined distribution is 46.9 percent less progressive assuming no shifting of the employer tax, and 70.8 percent less progressive assuming full shifting of that tax. Finally, in 1988 the combined distribution is 52.3 percent less progressive assuming no shifting and 73.5 percent less assuming full shifting.

These numbers provide some indication of the large and growing role played by social security taxes in the federal
tax system. Of more importance than the effects of the social security tax on the distribution of federal taxes within a given year, however, are the effects of that tax on trends in the total federal tax distribution between years. The social security tax amplifies the decrease in progressivity apparent in the income tax system under 1984 law as opposed to 1980. Compared to a 2 percent overall decrease in progressivity in the income tax distribution, progressivity in the combined distribution declined 16.9 percent under the assumption of no shifting of the employer social security tax. If one accepts that the employers' portion of the social security tax is shifted to labor, this decline becomes 33 percent. Indeed, under the latter assumption, it appears that progressivity in the 1984 combined distribution is scarcely retained at all. On a scale in which +1 indicates extreme progressivity, -1 extreme regressivity and 0 proportionality, the Suits index (under incidence assumption 2) for the 1984 combined distribution is but .062.

The above results again differ between single and married taxpayers. Although income tax progressivity actually increased slightly for married taxpayers in 1984 (versus a slight decrease for single taxpayers), the decrease in progressivity in the combined distribution from 1980 to 1984 is far larger in the married taxpayer category. Married taxpayers faced a 17.3 percent decrease
in progressivity under incidence assumption 1 and a 35.7 percent decrease under incidence assumption 2. Single taxpayers faced declines of 11.5 percent and 20.9 percent respectively, indicating that growth in social security taxes is especially burdensome for lower income married taxpayers.

From 1984 to 1988, the social security tax dampened, but did not eliminate, the increase in progressivity effected in the income tax system. Here, the effects were relatively consistent across all taxpayer categories and under both assumptions regarding incidence of the employer social security tax. The total sample results for the combined distribution reveal a 13.3 percent increase in progressivity under the assumption of no shifting of the employer tax, and a 14.5 percent increase under the assumption that the employer tax is fully shifted. Note, however, that the 1988 combined distribution, though more progressive than 1984, is still much less progressive than that for 1980.

Again, a graphic analysis is consistent with the above analysis based on the Suits index. Graphs 5A and 5B, present the weighted average combined income and social security tax rates faced by taxpayers in different income groups under tax laws in effect in 1980, 1984 and 1988. Like Graph 1, Graph 5 illustrates that the decline in effective tax rates was relatively larger for higher income
groups than for lower income groups from 1980 to 1984 and relatively smaller for higher income groups from 1984 to 1988. Graph 5 also illustrates the lesser degree of progressivity characterizing the combined distribution relative to the income tax distribution. Compared to Graph 1, Graph 5 exhibits a substantial upward shift in effective tax rates for lower income groups. Higher income groups, on the other hand, experience very little differences in effective tax rates in the income tax system when compared to the combined income and social security tax systems.

Two other attributes of Graph 5 deserve attention as well. First, Graph 5 exhibits a "leveling off" of effective tax rates for the very top income groups, reflecting the practical irrelevance of the social security tax once a taxpayer's income exceeds a certain very high level. The second issue of interest in Graph 5 is the large dip in effective tax rates at the very bottom of the income scale. This dip is a factor of the varied individual characteristics of the taxpayers making up income group 1 ($0-3,400). Group 1 is composed largely of taxpayers with substantial amounts of income from wages and salaries or from investments, offset by sizeable losses (presumed active) from self-employment or from rents, royalties, partnerships, etc. Imposition of social security taxes on these individuals' wages or salaries pushes their effective tax rates to abnormally high levels.
In summary, the combined distribution of income and social security taxes has behaved quite differently than the income tax distribution alone over the past 8 years. Growth in the social security tax amplified the decline in progressivity exhibited in the income tax distribution between 1980 and 1984. Perhaps more significantly, growth in social security taxes appears to have muted the dramatic increase in income tax progressivity effected by TRA 86. Although the combined distribution of income and social security taxes did become more progressive from 1984 to 1988, this increase was far less substantial than that exhibited in the income tax distribution alone. Furthermore, unlike in the income tax distribution, the increase in progressivity of the 1988 combined tax distribution from 1984 to 1988 was not enough to offset the decreased progressivity in that distribution from 1980 to 1984. Thus, in a decade in which progressivity in the distribution of income taxes increased by 22.9 percent (total sample), progressivity in the combined distribution of income and social security taxes actually decreased. This decrease was in the neighborhood of 5.8 percent if one assumes that social security taxes levied on employers are not shifted to employees. But, if one assumes (as most economists do) that these employer taxes are actually shifted to employees, the decline in progressivity in the combined distribution over this period is 23.7 percent. The
Suits index for the 1988 combined federal tax distribution under this assumption is a mere .071. The distributive effects of growth in the social security tax appear to have dominated those associated with changes in the income tax system during this decade.

Analysis of Social Security Reform Proposals

Vertical Equity

The Suits index measures for each reform proposal under the two assumptions regarding incidence of the employers' social security tax are presented in Tables 5 and 6. Table 7 summarizes the post-reform social security tax rates required to maintain the current level of social security taxes under each reform proposal. Although the raw progressivity measures are shown in Tables 3 and 4, the following analysis focuses upon the increase in progressivity that would be effected by each reform proposal in comparison with the 1988 "pre-reform" combined tax distribution.

Proposal 1: Provision of Exemptions

Provision of a $1,950 exemption to the social security tax base for each taxpayer and spouse provides a substantial improvement in progressivity. For the total sample, this reform proposal leads to about a 15.5 percent increase in the Suits index under both assumptions regarding incidence of the employer social security tax. This increase is a little more pronounced for single taxpayers; the two single
taxpayer groups experienced between 17 and 20 percent more progressivity under this proposal compared to the 1988 pre-reform combined distribution.

A review of Graphs 6A and 6B, supports this analysis. These graphs depict the weighted average total sample combined effective income and social security tax rates under proposal 1. The graphs reveal a substantial decrease in effective tax rates for the lowest income groups, while the highest income groups face essentially the same effective rates as before the reform.

Surprisingly, the cost of such a reform appears relatively small under the current system. Okner [1975] reported estimates in 1975 suggesting that provision of exemptions to the social security tax base would require a prohibitive increase in the social security tax rate in order to recoup lost revenues. In contrast, the results of this study suggest that only about a one percentage point increase in the 1988 social security tax rate would be required to maintain revenues. This finding alone reflects the magnitude of the growth in the social security tax since the early 1970s. Since that time substantial increases have taken place in both the tax rate and the tax base subject to the social security levy. Those increases, when combined with the growth of average family income during this period, appear to have substantially lowered the potential cost associated with the introduction of
exemptions to the social security tax base.

Proposal 2: Removal of the Earnings Ceiling

The effects of removing the earnings ceiling appear to differ for different taxpaying groups. This proposal would provide some increase in progressivity for single taxpayers (+9 percent under incidence assumption 1, +16.8 percent under incidence assumption 2), but not as much as proposal 1 above. For married taxpayers, on the other hand, removal of the earning ceiling provides approximately a 23.7 percent increase in the Suits index under the assumption of no shifting of the employer social security tax, and a 54.5 percent increase under the assumption of full shifting of that tax. These differences reflect differences in average income levels among single and married taxpayers.

The total sample results are strongly influenced by the married taxpayer groups. Under the assumption of no employer tax shifting, Suits index for the total sample increases by 19.5 percent. Assuming full shifting of the employer tax, this increase is 45 percent. Graphs 7A and 7B, support this analysis. Effective tax rates for groups 1-8 remain just below their pre-reform levels (reflecting the lower required social security tax rate - See Table 7), while those for higher income groups, especially groups 16 and 17, increase sharply. Thus, proposal 2 increases progressivity by raising the burdens of higher income taxpayers -- as opposed to lowering the burdens of lower
income taxpayers as in proposal 1.

**Proposal 3: No Ceiling and Exemptions**

Not surprisingly, the combination of proposals 1 and 2 above increases progressivity in the combined distribution of income and social security taxes by more than either proposal individually. Under proposal 3, the Suits index for the total sample increases by 36.7 percent under incidence assumption 1 and 54.9 percent under incidence assumption 2. The increase is amplified in the married taxpayer groups, especially under the full shifting assumption. Under this assumption, the Suits index for the married taxpayer groups increases by 71.2 percent (versus only 36.6 percent for single taxpayers). These results are illustrated in Graphs 8A and 8B. The graphs show both a decrease in effective tax rates paid by lower income groups and an increase in rates for upper income groups - essentially a combination of the results reflected in Graphs 6 and 7 (A and B).

Not only does the combination of proposals 1 and 2 achieve a greater increase in progressivity than either proposal individually, it would appear to do so without causing any increase in the required social security rate (relative to the 1988 pre-reform system). Table 7 shows that the estimated social security rate required to maintain revenues under proposal 3 is only 7.43 percent, slightly less than the pre-reform 1988 rate of 7.55 percent.
Again, these results are in marked contrast to those reported in the 1970s [see Okner, 1975; Brittain, 1973].

**Proposal 4: Limited Exemptions**

The fourth proposal analyzed also calls for introduction of exemptions to the social security tax base, but only for those with earnings below a certain phase-out level. Those with earnings above this level would have their exemptions phased out as described in Chapter IV. Given the nature of the proposal, this option by necessity includes elimination of the earnings ceiling as well. Thus, proposal 4 is very similar to proposal 3, except that the exemptions are phased out, indirectly providing for some degree of progressivity in the rate structure.

The results of this manipulation of the tax burden are virtually indistinguishable from those of proposal 3. Tables E and F show that for no taxpayer group does the Suits index differ more than .002 between proposals 3 and 4. Table 7 shows that the required tax rate associated with proposal 4 (.0739) is only marginally lower than that associated with proposal 3 (.0743). Graphs 9A and 9B, depicting the weighted average total sample effective tax rates associated with proposal 4, mirror graphs 8A and 8B, which depict these rates under proposal 3. In sum, proposal 4 provides only a negligible improvement in progressivity over proposal 3.
Proposal 5: Graduation of Social Security Tax Rates

As shown in Table 7, the results of this study suggest that a dual rate structure consisting of rates of 5.68 percent and 10.61 percent would yield approximately the same social security revenues as are generated by the current system if applied to the income parameters inherent in the 1988 income tax structure (i.e., if the upper rate was triggered at income levels of $29,750 for married taxpayers, $17,850 for single taxpayers and $23,900 for taxpayers filing as heads of household). The effects of such a reform upon progressivity in the combined distribution of income and social security taxes differ depending upon one's assumption regarding the incidence of the employers' social security tax. Under the assumption that this tax is not shifted to employees, this proposal generates results very similar to those of proposals 3 and 4 (combining exemptions with elimination of the earnings ceiling). Indeed, for single taxpayers, the Suits index associated with the graduated rate proposal is essentially the same as those associated with proposals 3 and 4. Married taxpayers would enjoy a slightly larger increase in progressivity relative to proposals 3 and 4 (48 percent vs 39 percent), leading the total sample results to reflect a slightly higher degree of improvement (under incidence assumption 1, the Suits index for the total sample is 43.75 percent greater for the proposal 5 distribution compared to the
pre-reform distribution).

The results differ markedly if one assumes the employers' social security tax is fully shifted to labor. Under this assumption, the Suits index associated with the proposal 5 distribution is 100 percent greater than that associated with the pre-reform distribution (compared to an increase of only 55 percent for proposals 3 and 4). Again, these results are driven by the married taxpayer groups which exhibit an average increase in progressivity of 114 percent, compared to only 58 percent for single taxpayer groups.

Proposal 6: Graduated Rates and Limited Exemptions

Table 7 shows that the rates required to maintain social security revenues are only slightly higher when the limited exemption proposal is combined with the graduated rate proposal. Combining proposals 4 and 5 would require that the bottom rate be raised from about 5.68 percent (above) to about 6.05 percent. The top rate would increase from 10.61 percent to 11.30 percent.

The effect of such a combination would be a substantial increase in progressivity for all family groups, as exhibited in Tables 5 and 6. Under the assumption of no shifting of the employer tax, the Suits index increases 47 percent for single taxpayers, 61.5 percent for married taxpayers, and approximately 58.6 percent for the total sample. Under the assumption of full shifting, the results
are even more impressive, single taxpayers experiencing an increase in progressivity of 77 percent, married taxpayers an increase of 129 percent, and the total sample an average increase of 117 percent. Proposal 6 yields by far the most substantial increase in progressivity to this point, at the cost of only a modest increase in required tax rates.

Proposal 7: Base Expansion - Interest and Dividends

As shown in Table 7, the results of this study indicate that inclusion of interest and dividends in the social security tax base (along with elimination of the earnings ceiling) would allow about a one percentage point drop in the social security tax rate. In proposal 7, this reduced rate would be applied to all wages and salaries (assessed on both employees and employers) and to interest and dividends. Self-employment income (but not interest and dividends) would continue to be taxed at twice this rate.

Though this proposal would presumably affect primarily higher income taxpayers, Tables 5 and 6 indicate that its effect on progressivity in the combined tax distribution would be essentially the same as proposal 2, removal of the earnings ceiling with no expansion of the theoretical tax base. Both proposals increase progressivity (relative to the pre-reform distribution) by about 19 percent under incidence assumption 1 (no employer tax shifting) and about 48 percent under incidence assumption 2 (full shifting of the employer tax). This observation is supported by an
analysis of Graphs 12A and 12B, depicting the effective tax rates associated with proposal 7 under the two assumptions regarding incidence of the employer social security tax. These graphs are virtually identical to Graphs 7A and 7B, which depict effective tax rates under proposal 2. Apparently, the distribution of interest and dividend income is not as heavily skewed toward upper income taxpayers as is generally assumed. (Note, however, that tax-exempt interest has not been considered in this study. If this interest were included, the distribution of interest and dividends might be considerably more skewed).

Proposal 8: Interest and Dividends plus Limited Exemptions

Combination of limited exemptions with an expanded tax base including interest and dividends (and elimination of the earnings ceiling) would require that the social security tax rate be increased, but only marginally. Table 7 indicates that the required tax rate under this proposal would be approximately 6.98 percent, about the same as that required under proposal 2 (elimination of the earnings ceiling). Thus, it would appear that the reduction of the tax base caused by introduction of limited exemptions is roughly equal to the increase in that base brought about by subjecting interest and dividends to the tax.

Given the similarity of results between proposals 2 (elimination of the earnings ceiling) and 7 (inclusion of interest and dividends in the tax base), one might expect
some similarity between the results of this proposal and proposals 3 and 4 (combining exemptions with elimination of the earnings ceiling). Tables 5 and 6 reveal that this similarity does indeed exist. Provision of exemptions to an expanded tax base including interest and dividends achieves a level of progressivity in the combined income and social security tax distribution virtually the same as that in proposals 3 and 4. This congruity exists under both assumptions regarding incidence of the employer social security tax, as is illustrated by a comparison of graphs 13A and 13B, (depicting effective tax rates under proposal 8) and graphs 8A, 8B, 9A and 9B, (depicting those rates under proposals 3 and 4).

Proposal 9: Interest and Dividends plus Graduated Rates

The combination of a graduated rate structure with an expanded social security tax base including interest and dividends yields a degree of progressivity in the combined tax distribution just slightly higher than that associated with proposal 5 (graduated rates assessed on earned income). Additionally, the rate structure required to maintain revenues is slightly lower under this proposal than under proposal 5. This proposal would require tax rates of about 5.31 percent and 9.91 percent and would increase overall progressivity in the combined tax distribution by approximately 45.3 percent under incidence assumption 1 (no shifting) and 106 percent under incidence assumption 2 (full
shifting).

**Proposal 10: Interest & Dividends, Graduated Rates, and Limited Exemptions**

Not surprisingly, the combination of proposals 7, 8 and 9 yields a distribution substantially more progressive than any of them individually. Indeed, this proposal's 63.3 percent increase in progressivity under incidence assumption 1, and 127 percent increase under incidence assumption 2, are higher than any proposal analyzed to this point.

However, consistent with the other proposals involving expansion of the theoretical social security tax base to include interest and dividends, the Suits index associated with this proposal is only marginally higher than that associated with the same proposal applied to a tax base limited to so-called "earned" income (i.e., proposal 6).

The results associated with proposals 7 through 10 are all consistent with the assertion that including interest and dividends in the social security tax base would allow only a modest reduction in the required tax rate and effect only a slight improvement in progressivity relative to a like tax assessed solely against wages, salaries and self-employment income.

**Proposal 11: Extension of the Social Security Tax to Total Income**

Table 7 shows that extension of the social security tax to total income would enable a decrease in the basic social security tax rate to about 6 percent while still generating
the same level of revenues as in the current system. However, Tables 5 and 6 indicate that this proposal would yield a combined social security and income tax distribution much less progressive than proposal 10 above (interest and dividends, graduated rates and limited exemptions). Under the assumption of no shifting of the employers' social security tax, the tax distribution for this proposal would be even less progressive than those associated with proposals 3 and 4, in which exemptions are combined with removal of the earnings ceiling, but the theoretical tax base is not expanded. This proposal generates about a 32 percent increase in progressivity in the total sample distribution, compared to approximately 37 percent in proposals 3 and 4 (and 63 percent in proposal 10).

The results are somewhat different if one assumes the employers' social security tax is fully shifted to labor. Under this assumption, the distribution of taxes associated with proposal 11 is somewhat more progressive than those associated with proposals 3 and 4, though still substantially less progressive than that associated with proposal 10. Assuming full shifting, expansion of the tax base to include total income increases progressivity in the total sample combined tax distribution by about 70 percent (compared to 55 percent in proposals 3 and 4 and 127 percent in proposal 10).
Proposal 12: Total Income plus Limited Exemptions

Providing limited exemptions in addition to expanding the social security tax base to include total income would require a tax rate only slightly higher than that required in proposal 11 (6.38 percent -- see Table 7). Yet It would provide substantially more progressivity than would proposal 11. Tables 3 and 4 show that this proposal would increase progressivity in the total sample combined tax distribution by 50.8 percent under incidence assumption 1 and 91.5 percent under incidence assumption 2. The resulting distribution is significantly more progressive than that associated with proposal 11 (total income), but still not as progressive as proposals 6 (graduated rates and limited exemptions applied solely to earned income) or 10 (graduated rates and limited exemptions applied to earned income plus interest and dividends). As with other proposals involving exemptions, the effects of proposal 12 are especially dramatic for the married taxpayer groups. This reflects the generally higher level of income associated with the married taxpayer groups as well as the doubling of the benefit associated with the provision of personal exemptions to married taxpayers.

Proposal 13: Total Income plus Graduated Tax Rates

Table 7 suggests that application of a graduated rate structure to a social security tax base consisting of total income would require relatively low rates to generate the
same level of revenues as under the current system. Indeed, the results of this study indicate that a top rate of 8.92 percent (only about 1.5 percentage points greater than the current single tax rate), coupled with a bottom rate of only 4.78 percent, would be sufficient to maintain the current level of revenues. The Suits index associated with this proposal is essentially the same as that associated with proposal 10 in which graduated rates are assessed against a tax base consisting of earned income and interest and dividends, reduced by limited exemptions.

Though proposal 13 yields substantially the same level of overall progressivity as proposal 10, the two differ in two important respects. First, as revealed in Table 7, the rate structure required to maintain revenues under proposal 13 is lower than that required under proposal 10. Second, a comparison of graphs 15A and 15B, depicting the effective combined income and social security tax rates associated with proposal 10, and graphs 18A and 18B, depicting these rates for proposal 13, illustrates some interesting differences in the rate distributions associated with these proposals. Graphs 15A and 15B, are characterized by dips at both ends of the effective rate distribution. At the bottom end, the effective tax rate faced by income group 1 is several percentage points higher than that faced by group 2. At the top, income group 17 faces an effective rate 2 or 3 percentage points lower than income group 16. Both of
these dips appear to be caused by differences between taxpayers in the lowest and highest income groups and those in the middle income groups with regard to income characteristics. Taxpayers in the two end point groups tend to be characterized by greater amounts of income and loss from sources such as partnerships, estates, and trusts (also capital gains and losses, especially for group 17) than their counterparts in groups 2 through 16. Inclusion of these gains and losses in the tax base eliminates these dips at both ends of the effective tax rate distribution, as illustrated in Graphs 18A and 18B.

**Proposal 14: Total Income, Graduated Rates and Limited Exemptions**

Of all the reform proposals analyzed in this study, proposal 14, combining the reforms suggested in proposals 11 through 13, yields by far the greatest increase in progressivity for all taxpayer groups individually and for the total sample distribution. As exhibited in Tables 5 and 6, this proposal yields a 78.9 percent increase in progressivity under the assumption of no shifting of the employer social security tax. Under the assumption of full shifting of this tax, proposal 14 effects a tremendous 155 percent increase in progressivity. Graphs 19A and 19B, illustrate that this increase is accompanied by a complete elimination of the dips at each extreme of the effective tax rate distribution characteristic of the distributions of
most previous proposals. Table 7 shows that these results are achieved at the cost of only a modest increase in the tax rate structure relative to proposal 13 (total income plus graduated rates).

Summary

The 14 reform proposals discussed above can be conveniently classified into 3 categories. The categories differ only with regard to the sources of income included in the theoretical social security tax base: category 1 taxes only earned income, category 2 taxes earned income plus interest and dividends, and category 3 taxes total income as defined in the federal income tax system. Within each category, the theoretical base is manipulated by imposing a ceiling (in the case of category 1) or providing personal exemptions. Additionally, the effects of imposing a graduated rate structure, as opposed to a single rate structure, are analyzed for the different tax base manipulations. In every case, the rate structure is manipulated in such a way as to maintain the current level of revenues (i.e., the 1988 pre-reform level).

Not surprisingly, the results indicate that within each theoretical tax base class, progressivity is maximized when no ceiling is imposed on the tax base (no ceiling is ever imposed in categories 2 and 3) and the tax structure is made maximally progressive by introducing both graduated rates and limited (i.e., phased-out) exemptions. Also not
surprising, progressivity for a given combination of rate structures and exemptions is increased by expansion of the theoretical tax base. However, the results indicate that the most progressive proposal in each theoretical tax base category is always more progressive than any proposal in a higher category (i.e., one with a larger theoretical tax base) except the most progressive proposal within that class (with the exception of proposal 13). That is, expansion of the theoretical tax base improves progressivity over the most progressive proposal within a particular theoretical base category only if the most progressive combination of graduated rates and limited exemptions is instituted in addition to the base expansion. Thus, it can be concluded that progressivity is enhanced to a greater degree by increasing the progressivity of the tax structure via the introduction of exemptions and graduated rates than by expanding the theoretical tax base, although the greatest increase in progressivity is achieved when both of these approaches are combined.

Horizontal Equity

As discussed in Chapter IV, horizontal equity in this study was measured in terms of the percentage change in the coefficient of variation (CV) of effective tax rates within each income group. The weighted average change was computed across all income groups within a family status category and then across all family status categories.
The resulting measure provides an indication of the average effect on horizontal equity of a particular tax change or proposal for particular family status groups or for the total sample. These measures were used in the current study to evaluate the horizontal equity effects of actual changes in the tax system from 1980 to 1984 to 1988 and of the proposed reforms being analyzed in the study. A summary of the results is provided in Tables 8 and 9 (Appendix B).

**Horizontal Equity in the Actual Tax Distribution**

Tables 8 and 9 show that from 1980 to 1984 horizontal equity in the combined social security and income tax distribution increased by an average of 1.7 percent under the assumption of no shifting of the employers' social security tax and 3.1 percent under the assumption of full shifting of that tax. This marginal improvement in horizontal equity occurred for every group except head-of-household filers, who suffered an average decrease in horizontal equity of 12 percent under incidence assumption 1 and 3 percent under incidence assumption 2.

What is not revealed in Tables 8 and 9 is that this effect differed for low income taxpayers versus high income taxpayers. The overall weighted average decrease in the CV (increase in horizontal equity) was driven by income groups 8 and above (income above $24,600). Income groups 0 through 7 universally experienced increases in the CV of
their effective tax rates. The relatively greater role of these groups in the HOH filing category explains that group's departure from the norm in the overall effect measures discussed above.

A variety of factors may explain this behavior, including the introduction of such items as the charitable deduction for nonitemizers and perhaps the Schedule W deduction in the income tax system. The most likely explanation, however, is the variety of income sources characterizing taxpayers in lower income groups. Particularly in groups 1-4, a large portion of those making up these groups is characterized by large amounts of losses which offset income from a variety of sources. The inapplicability of these losses and "non-earned" income sources in determining social security tax liability leads to a tremendous amount of variation in effective tax rates within these groups. Additionally, the differential results between incidence assumptions 1 and 2 suggests that self-employment income is a significant source of income for those in lower income groups. Growth in the social security tax burden from 1980 to 1984, rather than any change in the income tax law, is thus the likely culprit behind increasing variation in effective combined tax rates within these groups. Indeed, given the behavior of the CV of effective combined tax rates for groups 9-17, it seems likely that at lower income groups there was a decrease in
overall horizontal equity despite changes in the Internal Revenue Code improving horizontal equity in the income tax system over this period.

The pattern revealed in Tables 8 and 9 for 1988 is very similar to that for 1984. Compared to 1980, the overall weighted average change in the CV of effective tax rates for 1988 was -.007 under incidence assumption 1, and +.055 for incidence assumption 2. These results, which reflect a decline in horizontal equity in 1988 compared to 1984, again differ for different family status groups, in this case revealing increased variation for all groups other than married with family under both assumptions regarding incidence of the employers' social security tax. The real story, however, is again told outside these tables. Similar to 1984, variation in effective tax rates increased universally for income groups 9 and below. As discussed above, the most likely explanation for this behavior is growth in the social security tax.

Horizontal Equity and Proposals for Social Security Reform

As discussed previously, the social security reform proposals considered in this study can be conveniently classified into three groups -- those taxing "earned" income only, those taxing "earned" income plus interest and dividends, and those taxing total income as defined in the income tax system. The following discussion of the horizontal equity effects of these proposals will be
organized along the same lines.

**Category 1: Earned Income as Tax Base.** Six proposals to reform the social security tax system while retaining earned income as the theoretically appropriate tax base were examined. The first of these, provision of exemptions to the social security tax base, is seen in Table 8 to cause a rather slight (8%) increase in the variation of effective tax rates under the assumption of no shifting of the employer tax. This increase is more severe for nonfamily groups, implying that income from "non-earned" sources may be more relevant to these groups. Under the assumption that the employer tax is fully shifted (Table 9), taxpayers with families, both single and married, actually experienced decreases in the variation of effective tax rates. These decreases were only partially offset by increases for nonfamily groups, leaving a net decline in variation, on average, for the total sample.

The second proposal in this category, removal of the earned income ceiling, increased effective rate variation for all income groups under both incidence assumptions. The increase was especially large for married taxpayer groups, reflecting their generally higher levels of income from all sources. Not revealed in Tables 8 and 9, the magnitude of this increase is most extreme for married taxpayers in the top three income groups (incomes above $162,400). This should come as no surprise since the tax base is still
restricted to earned income.

Proposals 3 through 6 involved various combinations of exemptions and graduated rates applied to a tax base consisting of total earned income (i.e., no ceiling). Tables 8 and 9 show that all of these proposals increase average variation in effective tax rates for the total sample and for almost all income groups. An exception is the HOH group, which experienced decreased variation for those proposals involving exemptions from the tax base. These exemptions neutralize the social security tax for low-income HOH filers (who make up the largest portion of the HOH group). Consistent with the results of proposal 2, the absence of a ceiling on the tax base in all these proposals levered the increase in variation for married taxpayer groups far above that experienced by single taxpayers. Additionally, these increases were again especially severe for income groups 15, 16 and 17 within the married taxpayer classifications. These results are not particularly surprising given the generally higher levels of income from all sources characteristic of the married taxpayer groups. The only other notable differences across income groups were associated with those proposals calling for exemptions to the social security tax base (proposals 3, 4 and 6). Not surprisingly, low income groups tended to experience sizable decreases in effective tax rate variation when exemptions were a part of the proposed reform. All
other income groups within all four family status categories uniformly experienced increased effective rate variation for each of proposals 3 through 6.

Category 2: Interest and Dividends in the Tax Base.

Proposals involving extension of the tax base to include interest and dividends also tended to increase the average variation of effective tax rates within income groups, but not by as great a margin as similar proposals applied to a more narrow tax base (i.e., one consisting solely of earned income). There are interesting differences, however, in the effects of these proposals for different family status categories. Tables 8 and 9 reveal that, for all 4 proposals, variation in within-group effective tax rates increased much more for taxpayers with families than for those without. For the family groups, the effects of proposals 7 through 10 were strikingly similar to their counterparts applied only to earned income (i.e., proposals 2, 4, 5 and 6, respectively). For example, under the assumption of no shifting of the employer social security tax, proposal 7 (interest and dividends) increased effective rate variation in the MWF group by 31.8 percent, proposal 2 (earned income, no ceiling) by 32.8 percent. Proposal 8 (interest & dividends, limited exemptions) increased average variation for this group by 56.1 percent, proposal 4 (earned income, limited exemptions) by 57.5 percent. Proposal 9 (interest & dividends, graduated rates)
increased the coefficient of variation by an average of 76.7 percent for the MWF group, proposal 5 (earned income, graduated rates) by 78.5 percent. Finally, proposal 10 (interest & dividends, limited exemptions and graduated rates) increased variation, on average, by 132 percent for MWF taxpayers. Its counterpart applied to earned income (proposal 6) increased variation for MWF taxpayers by an average of 127 percent. These relationships hold under the assumption that employer social security taxes are fully shifted. Similar relationships exist for HOH taxpayers, although they were strained somewhat under the assumption that the employers'social security tax is fully shifted to labor.

Behavior in the nonfamily taxpayer groups was radically different. Here the coefficients of variation of effective tax rates declined for several of the proposals. And for those where the CV increased, the increase was much smaller than that associated with either the family groups for proposals 7 through 10 or the nonfamily groups for like proposals applied to a tax base consisting solely of earned income (i.e., proposals 2, 4, 5 and 6). These differences probably reflect differences in average age levels between family and nonfamily groups. Investment income seems likely to be more heavily distributed among older taxpayers who no longer are burdened with the responsibility of raising children.
Category 3: Total Income in the Tax Base. Tables 8 and 9 show that when the social security tax base was expanded to include total income as defined in the income tax system, the weighted average coefficient of variation of effective combined tax rates decreased almost uniformly for all family status groups across all reform proposals. Under the assumption that the employers' social security tax is not shifted to labor, the greatest decline was associated with the proposal simply to expand the tax base without providing exemptions or graduated rates (proposal 11). Under the assumption that the employers' tax is fully shifted to labor, the most improvement in horizontal equity was associated with the proposal to combine graduated rates with base expansion (proposal 13), although, proposal 11 generated a substantial improvement as well. Not faring so well was proposal 12, which combined limited exemptions with maximum base expansion. Under incidence assumption 1, this proposal actually caused a substantial increase in variation for the married with family group. This increase, however, was due entirely to an unexplained increase in the CV for income group 4 ($7,600 to $11,900); all other income groups within this family status category experienced decreased CV's. A similar increase in variation within the HOH group under the assumption of full shifting of the employer social security tax was also caused by an unexplained increase in variation for income
group 4. Again, all other income groups experienced improvements in horizontal equity. Finally, proposal 14, combining limited exemptions and graduated rates with maximum base expansion generated substantial improvement in horizontal equity under assumption 1 regarding the incidence of the employers' social security tax (no shifting), yet only marginal improvement (on a total sample basis) under incidence assumption 2. Like those associated with proposal 12, these results were difficult to interpret due to unexplained variations in the effects for different income groups. However, the general observation can be made that horizontal equity improved for almost every income group within all 4 family status categories under both incidence assumptions.

Summary. In summary, analysis of the change in the coefficient of variation of effective combined tax rates is plagued by certain inter-income-group differences that are difficult to explain. However, some general observations can be drawn. First, Tables H and I make clear that the introduction of exemptions and graduated tax rates to the social security tax system only exaggerated intra-income-group differences in effective tax rates as long as the theoretical tax base was confined solely to earned income. Expansion of the theoretical base to include interest and dividends alleviated this problem somewhat for nonfamily taxpayer groups, but taxpayers with families were largely
unaffected. Substantive improvement in horizontal equity was achieved only by further expansion of the theoretical social security tax base to include total income as defined in the income tax system.
CHAPTER V REFERENCES


CHAPTER VI

SUMMARY AND CONCLUSIONS

Discussion and Summary

Debate over the distributional equities, or inequities, of the social security system has largely focused upon the question of whether the social security program should properly be viewed as an insurance program or a tax transfer system. Certainly, the system was originally conceived of as a massive, governmentally administered, mandatory insurance program. As the system has evolved, however, it has developed certain characteristics that are perceived by many to be more consistent with a tax transfer system than an insurance program.

The most fundamental issue in the tax transfer vs. insurance debate concerns the relationship between benefits received and taxes paid into the system. Critics of the insurance framework assert that the insurance goal of individual equity has been displaced in the system by the welfare goal of social adequacy. The benefit structure has been altered in an effort to guarantee beneficiaries some minimum level of economic security, regardless of the level of taxes previously paid. As a result, the relationship between benefits received and contributions paid into the system -- presumably of utmost importance in a pension
insurance plan -- has steadily eroded.

To this point, emphasis on social adequacy arguably has not diminished the system's ability to provide individual equity for its participants. Current (and past) beneficiaries uniformly have enjoyed "surplus" benefits [Ozawa, 1982]. That is, most participants in the system over the past 40 years have received a higher rate of return on their contributions than would be expected in a private pension plan. Thus, it might be argued that the social security system has successfully provided individual equity for its participants while simultaneously guaranteeing them some minimum level of economic security regardless of the level of past contributions.

But the ability of the system to provide both individual equity and social adequacy has been founded upon substantial growth patterns in both the tax levy assessed by the system and in the labor force (and thus the wage base) upon which such levy is assessed. Neither of these growth patterns can be expected to be sustained in the future. Indeed, the future trend in the size of the labor force is expected to be negative; the ratio of workers to retirees, approximately 5:1 today, is expected to decline to 2:1 in the early part of the 21st century [Outslay, 1987]. Increases in the life expectancy of retirees will further increase the burden on wage-earners.

This problem is exacerbated by the Congressional
decision long ago to forgo plans for building up social security trust funds, opting instead to finance benefits on a pay-as-we-go basis (i.e., solely from current tax revenues). Without the trust funds, benefit payments to the burgeoning population of retirees must be financed solely from the contributions of a shrinking wage-earner population. It seems highly unlikely that the system will be able to provide benefits to these workers upon their own retirement that are actuarially commensurate with their contributions during their working years.

If current and future generations of wage earners cannot expect to receive benefits from the system commensurate with contributions paid in during their working years, this raises serious questions about the propriety of the current social security taxing scheme. As the relationship between benefits and contributions erodes, so too does the rationale for the system's regressive tax distribution. Participants' contributions do not entitle them to a specific level of benefits, but only to the right to withdraw benefits at the level deemed appropriate by future generations of workers and voters. Thus, even if the social security program as a whole continues to be viewed as a social insurance program -- and there are substantial political and social incentives for doing so -- the financing component of the program must be analyzed within the context of the overall federal tax system. This means
that the distributional objectives of that overall system
must be recognized in determining the appropriate
distribution of the social security tax burden.

If the social security tax were a relatively minor
component of the federal tax system, then some inconsistency
between its distributional patterns and those of the more
significant components of the overall system could perhaps
be tolerated. But this is not the case. By 1990, social
security's share of total federal tax revenues is expected
to be approximately 37 percent. This compares to a share
in 1975 of only 30 percent [CBO, 1987]. In comparison, the
share of total federal revenues attributable to the
individual income tax has remained essentially constant,
increasing from 44 percent in 1975 to a projected 45
percent in 1990 [CBO, 1987].

As social security's role in the federal tax system has
grown, so has its effect on the distribution of the total
federal tax burden. This study has focused on the combined
distributions of individual income and social security
taxes, which constitute over 80 percent of total federal
revenues. The results of the study indicate that sustained
growth in the social security levy during the 1980s has
undermined the effects of landmark reforms in the income tax
system during this time period.

Despite changes in the Internal Revenue Code which
increased progressivity in the distribution of individual
income taxes by almost 25 percent for the sample taxpaying group from 1980 to 1988, progressivity in the combined distribution of income and social security taxes actually declined for these taxpayers over this period of time. Under the assumption that employer social security taxes are shifted to labor, which most economists accept, the magnitude of this decrease (23.7%) slightly exceeded that of the increase in progressivity exhibited in the income tax distribution. The regressive effects of growth in the social security levy have dominated the progressive effects of income tax reform during this decade.

These results suggest that the professed goal of increasing fairness in the federal tax system that has motivated recent income tax reforms may have been a lost cause. Not only has progressivity apparently declined from 1980 to 1988, but variation in effective combined tax rates among similarly situated taxpayers (i.e., within income groups) has increased for taxpayers in income groups below the social security earnings ceiling. The results make clear that the income tax system is not at fault; alleviation of these inequities would seem most efficiently achieved through reforms within the social security tax system.

Toward this end, the second phase of this study evaluated the prospects for improvement of several proposals for social security reform. These proposals are intended
primarily as examples of the general types of reform that might be possible, rather than as specific recommendations. The results indicate that although none of the proposals analyzed would be sufficient to restore progressivity in the combined income and social security tax distribution to that level exhibited in the income tax distribution alone, substantial improvements are possible.

Two basic types of reforms were analyzed. The first type of reforms consisted of those which would increase progressivity in the basic social security tax structure as it is applied to a particular theoretical tax base. These reforms include such things as removing the ceiling on income subject to the tax, providing exemptions to the tax base for some or all taxpayers, and replacing the current single tax rate with a two-tier graduated tax structure. The second type of reform included proposals to expand the theoretical tax base, first to include interest and dividends along with earned income in the theoretical base, and, second, to extend the base to include total income as defined in the income tax system.

The results suggest that the first type of reform provides a potentially more powerful mechanism for improving vertical equity in the combined distribution of income and social security taxes. A combination of removing the earnings ceiling, providing exemptions for taxpayers with earnings below the current ceiling, and introducing a two-
tiered graduated rate structure could increase progressivity by up to 60 percent under the assumption that employer social security taxes are not shifted. Under the more realistic assumption that these taxes are fully shifted to labor, the increase could exceed 115 percent.

These dramatic improvements could be achieved at surprisingly low cost. For example, results of the study suggest that the above combination of reforms could generate the current level of social security revenues under a rate schedule consisting of a lower rate of just above 6 percent and an upper rate of below 12 percent. For most taxpayers, this would represent a substantial reduction in effective social security tax rates relative to the current system in which a single rate of 7.55 percent is assessed against salaries and wages up to $45,000. The major drawback associated with this proposal concerns the rather sizable increase in average within-income-group tax rate variation. The results are somewhat mixed in this regard, however, showing decreased variation among lower income groups, relatively moderate increases in variation among middle income groups, and substantial increases in variation only for the top three income groups (incomes above $129,400). It should be noted that even after these increases, upper income groups are still characterized by substantially lower coefficients of variation than their lower income counterparts.
Expansion of the theoretical tax base yields even further improvements in progressivity, but only if the maximally progressive combination of type 1 proposals is retained (i.e., no ceiling, exemptions, graduated rates). These improvements are rather moderate when base expansion is limited solely to interest and dividends. The primary benefits of this limited expansion of the theoretical tax base are slightly lower tax rates (relative to the same combination of type 1 proposals applied solely to earned income) and lower increases in average within-group effective tax rate variation.

More meaningful improvements in both vertical and horizontal equity could be achieved if the theoretical tax base were expanded to include total income as defined in the income tax system. This theoretical base expansion, when combined with a tax structure consisting of limited exemptions and graduated rates, could generate increases in progressivity (relative to the current distribution) of up to 78 percent under the naive assumption of no shifting of the employer tax, and over 150 percent under the assumption that this tax is fully shifted to labor. Additionally, expansion of the theoretical base to include total income would provide for substantial decreases in effective tax rate variation for taxpayers in almost every income group.

These improvements do not come without a cost, however. In this case, the primary drawback concerns the risk that...
full base expansion may diminish the long-run stability of the social security system. Although the social security tax should be analyzed in the context of the overall federal tax system, it is important that the system retain its own separate identity. As discussed in Chapter III, maintenance of the social security system as an independent system provides for a degree of fiscal responsibility that may not exist if social security benefits are financed out of general revenues. Additionally, retaining the independent status of the social security financing mechanism fosters the perception of social security benefits as an earned right rather than a welfare payment, a perception many feel to be quite important to the long-term success of the program. Assessing both the social security tax and the income tax against the same tax base would seem clearly to increase the likelihood of someday merging the two systems into one.

In summary, the results of this study suggest that if the widely acclaimed objective of increasing fairness in the federal tax system is to be accomplished, reform of the social security tax is necessary. At a minimum, the existing structure should be reformed to maximize progressivity by removing the earnings ceiling, providing exemptions for some or all taxpayers, and replacing the current single rate structure with a graduated one. The cost of these reforms in terms of increasing tax rates would
be substantially lower in 1988 than estimates in the early 1970s have previously indicated. The real cost of such reforms would not be measured in terms of increased social security tax rates, but rather in terms of decreases in horizontal equity among the wealthiest taxpayer groups. Because variation in effective tax rates within these groups would still be much lower than that within lower income groups under current law, this cost seems justified.

Expansion of the theoretical tax base beyond earned income could achieve even greater improvements in vertical equity while simultaneously decreasing the costs of reform. For practical purposes, however, meaningful improvements are possible only if full base expansion (i.e., to total income) is combined with maximal structural progressivity (i.e., exemptions, graduated rates). But although this combination of reforms would provide substantial improvements in both vertical and horizontal equity, these benefits must be weighed against the risk of potentially undermining the long-run independence of the social security system.

Limitations

These conclusions are subject to a number of limitations. Perhaps foremost among these is the static nature of the analysis. The lack of contemporary data necessitated the manipulation of 1984 data to conform tax liabilities to 1988 and 1980 income and social security tax
The results are subject to two criticisms. First, it is clear that taxpayer behavior is in part reactive: taxpayers may change their behavior in response to tax law changes. If they do, the recomputed tax liabilities used in this study may not accurately represent the actual distribution of tax liabilities existing under 1988 or 1980 tax law, nor under the various proposals for social security reform.

Additionally, it is possible that the distribution of income changed between 1980 and 1984, or between 1984 and 1988, for reasons other than changes in the tax law. Such a change would of course affect the distribution of taxable income as well as the distribution of tax liabilities for the year(s) involved. Clearly, no such change will have been captured in the results of this study.

Another potential limitation is the limited scope of the analysis. This study focused solely on the income and social security taxes. But individuals also pay, directly or indirectly, federal excise taxes and corporate income taxes. As a result, conclusions reached in the study pertain only to the combined distribution of income and social security taxes and may not be descriptive of effects of either actual tax law changes in the 1980s or proposed reforms on the distribution of total federal taxes.

The narrow focus of the study is perhaps particularly troublesome with regard to the results obtained under the
assumption that the employer social security tax is not shifted to labor. Under this assumption, actual incidence of the employer tax has been conveniently ignored. But this tax is paid by individuals, whether it be paid in the form of lower wages, higher prices or reduced returns on equity investments. Omission of the effects of this shifting in the analysis of results under incidence assumption 1 introduces the possibility of potentially significant biases into the analysis.

Finally, reliance on the conclusions reached in this study must be tempered by an understanding of certain data limitations inherent in the 1984 Individual Tax Model File. Sufficient data simply was not available to make certain recalculations necessary under 1980 or 1988 law or both. Necessary data was also lacking to compute certain limitations imposed under tax law in effect in 1980 and 1988. Perhaps the most significant area plagued by insufficient data is that involving the limitation on passive losses. Assumptions were made and certain rules of thumb established in order to estimate the effect of tax law changes where relevant data was not available. To the extent these assumptions and rules of thumb may have been inappropriate or insufficient, the results of the study may be biased.
Contributions and Suggestions for Future Research

There are expected to be three primary contributions of this study. First, it provides some insight into the likely effects of changes in social security and income tax law on the distribution of the U.S. federal tax burden during the decade of the 1980s. The results indicate clearly that the effects of recent income tax changes, generally perceived to be positive, may have been completely offset by growth in the social security tax levy.

Second, the study provides some indication of the extent to which certain types of social security reform could alleviate the distortions in the distribution of the combined social security and income tax burden that have been caused by this growth in the social security tax. The results of this study suggest that certain social security tax reforms could be implemented which would generate a social security tax distribution substantially more consistent with the current distribution of income taxes. This would go a long way toward achieving some degree of consistency in the federal tax system.

Finally, this study presents results which suggest that the actual cost of social security reform would be far less in 1988 than was estimated in the early 1970s. Due to growth in the general wage level, relatively moderate changes in the social security tax rate structure would be
sufficient to finance exemptions to the social security tax base equivalent to those existing under current income tax law. The real cost of social security tax reform would appear more appropriately measured in terms of the decline in horizontal equity among certain income groups rather than in terms of the required increase in tax rates.

Still, some open issues remain. Perhaps the most obvious issue for future research concerns certain measurement problems encountered in this study. Particularly in the area of passive loss estimation, this analysis necessarily relied upon certain assumptions and rules of thumb. Additional research into the characteristics of so-called passive losses, and their relationships with tax preference items, may shed some light on the propriety of these assumptions. Additionally, the future availability of specific data on passive losses and other items for which data was missing in this study should make many of these assumptions unnecessary.

Perhaps a more fruitful area for future research is the effect of excise taxes and corporate taxes on the distribution of the federal tax burden. This study focused solely on social security and income taxes and revealed the extent to which growth in the former has offset the effects of reform in the latter. Consideration of the distributions of federal excise and corporate taxes in the analysis might lead to further refinements of the conclusions reached here.
CHAPTER VI REFERENCES


APPENDIX A

SUITS INDEX -- ILLUSTRATION
FIGURE 1
THE SUITS INDEX

ACCUMULATED PERCENT OF TOTAL INCOME

ACCUMULATED PERCENT OF TOTAL TAX

0  50  100
0  50  100
APPENDIX B

TABLES
TABLE 1
SOCIAL SECURITY REFORM PROPOSALS TO BE ANALYZED

1. Provision of exemptions against the employee tax base.
2. Removal of the ceiling on taxable earnings included in the tax base (both employee and employer).
3. Removal of the ceiling accompanied by provision of exemptions.
4. Provision of limited exemptions to the employee tax base (no ceiling on earnings).
5. Provision of a graduated rate schedule (no ceiling).
6. Provision of graduated rates accompanied by limited exemptions (no ceiling).
7. Inclusion of interest/dividends in the tax base (no ceiling).
8. Inclusion of interest/dividends in the tax base accompanied by limited exemptions (no ceiling).
9. Inclusion of interest/dividends in the tax base accompanied by graduated tax rates (no ceiling).
10. Inclusion of interest/dividends in the tax base accompanied by limited exemptions and graduated rates (no ceiling).
11. Inclusion of all income in the tax base (no ceiling).
12. Inclusion of all income in the tax base accompanied by limited exemptions (no ceiling).
13. Inclusion of all income in the tax base accompanied by graduated tax rates (no ceiling).
14. Inclusion of all income in the tax base accompanied by limited exemptions and graduated rates (no ceiling).
TABLE 2

INCOME GROUPS USED IN THE STUDY

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<tr>
<td>Total All Taxpayers</td>
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### TABLE 4
**SUITS INDEX**
**COMBINED INCOME & SOCIAL SECURITY TAX DISTRIBUTION**

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<tr>
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<td>.151</td>
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<tr>
<td>3. No Ceiling + Exemptions</td>
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<tr>
<td>4. Ltd. Exempts</td>
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<td>.171</td>
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<td>5. Grad Rates</td>
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<td>13. Total Income + Grad Rates</td>
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<td>14. Total Income + Ltd Exempts + Grad Rates</td>
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TABLE 6

SUITS INDEX

1988 COMBINED INCOME & SOCIAL SECURITY TAX DISTRIBUTIONS
UNDER VARIOUS PROPOSALS FOR SOCIAL SECURITY REFORM

INCIDENCE ASSUMPTION 2: SS SHIFTED TO LABOR

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<th>MFJ</th>
<th>SNF</th>
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<tr>
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<td>.141</td>
<td>.143</td>
<td>.240</td>
<td>.160</td>
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<td></td>
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<tr>
<td>6. Grad Rates + Exemptions</td>
<td>.158</td>
<td>.147</td>
<td>.151</td>
<td>.162</td>
<td>.259</td>
<td>.179</td>
<td>.154</td>
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<td></td>
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<tr>
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<td>.111</td>
<td>.118</td>
<td>.130</td>
<td>.211</td>
<td>.144</td>
<td>.120</td>
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<tr>
<td>10. Int/Div + Grad Rates + Exempts</td>
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<td>.157</td>
<td>.160</td>
<td>.171</td>
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<td>.212</td>
<td>.141</td>
<td>.121</td>
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<tr>
<td>12. Total Income + Ltd Exempts</td>
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<td>.131</td>
<td>.136</td>
<td>.147</td>
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<td>.162</td>
<td>.136</td>
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TABLE 7
SOCIAL SECURITY TAX RATES REQUIRED TO MAINTAIN REVENUES UNDER 14 REFORM PROPOSALS

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<td>5. Graduated Rates</td>
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<tr>
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<td>b. Upper Base</td>
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<td>7. Interest &amp; Dividends</td>
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<td>9. Int/Div plus Graduated Rates</td>
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<td>b. Upper Base</td>
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<td>b. Upper Base</td>
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<tr>
<td>11. Total Income</td>
<td>.0600</td>
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<td>12. Total Income plus Ltd Exemptions</td>
<td>.0638</td>
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<tr>
<td>13. Total Income plus Graduated Rates</td>
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</tr>
<tr>
<td>a. Lower Base</td>
<td>.0478</td>
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<tr>
<td>b. Upper Base</td>
<td>.0892</td>
</tr>
<tr>
<td>14. Total Income, Grad Rates &amp; Ltd Exemptions</td>
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</tr>
<tr>
<td>a. Lower Base</td>
<td>.0508</td>
</tr>
<tr>
<td>b. Upper Base</td>
<td>.0949</td>
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</table>

1 Self-Employment Tax Assessed at Two Times Employee Rate
## TABLE 8

WEIGHTED AVERAGE PERCENTAGE CHANGE IN COEFFICIENT OF VARIATION
COMBINED INCOME & SOCIAL SECURITY TAX DISTRIBUTIONS

INCIDENCE ASSUMPTION 1: NO SS SHIFTING

<table>
<thead>
<tr>
<th></th>
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<th>MFJ</th>
<th>SNF</th>
<th>HOH</th>
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<td><strong>PRE-REFORM TAX DISTRIBUTION:</strong></td>
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<tr>
<td>1984</td>
<td>-.022</td>
<td>-.059</td>
<td>-.044</td>
<td>-.018</td>
<td>.124</td>
<td>.008</td>
<td>-.017</td>
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<td>1988</td>
<td>.004</td>
<td>-.168</td>
<td>-.086</td>
<td>.038</td>
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<td><strong>PROPOSALS FOR SOCIAL SECURITY REFORM:</strong></td>
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<tr>
<td>1. Exemptions</td>
<td>.117</td>
<td>.092</td>
<td>.102</td>
<td>.079</td>
<td>.012</td>
<td>.067</td>
<td>.084</td>
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<tr>
<td>2. No Ceiling</td>
<td>.061</td>
<td>.328</td>
<td>.219</td>
<td>.010</td>
<td>.023</td>
<td>.012</td>
<td>.112</td>
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<tr>
<td>3. No Ceiling + Exemptions</td>
<td>.215</td>
<td>.564</td>
<td>.422</td>
<td>.101</td>
<td>.060</td>
<td>.094</td>
<td>.252</td>
</tr>
<tr>
<td>4. Ltd. Exempts</td>
<td>.219</td>
<td>.575</td>
<td>.430</td>
<td>.102</td>
<td>.064</td>
<td>.095</td>
<td>.257</td>
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<tr>
<td>5. Grad Rates</td>
<td>.150</td>
<td>.785</td>
<td>.527</td>
<td>.068</td>
<td>.126</td>
<td>.078</td>
<td>.295</td>
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<tr>
<td>6. Grad Rates + Exemptions</td>
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<td>1.271</td>
<td>.894</td>
<td>.205</td>
<td>.244</td>
<td>.212</td>
<td>.541</td>
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<td>7. Int/Div</td>
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<td>.318</td>
<td>.140</td>
<td>-.177</td>
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<td>9. Int/Div + Grad Rates</td>
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<td>.460</td>
<td>-.082</td>
<td>.138</td>
<td>-.042</td>
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<td>10. Int/Div + Grad Rates + Exempts</td>
<td>.229</td>
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<td>.876</td>
<td>.070</td>
<td>.269</td>
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<td>-.253</td>
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<td>-.013</td>
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<td>13. Total Income + Grad Rates</td>
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<td>.053</td>
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<td>-.219</td>
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<td>14. Total Income + Ltd Exempts + Grad Rates</td>
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<td>-.636</td>
<td>-.413</td>
<td>-.155</td>
<td>.267</td>
<td>-.078</td>
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1 CHANGE RELATIVE TO 1980
## Table 9

### Weighted Average Percentage Change in Coefficient of Variation

**Combined Income & Social Security Tax Distributions**

**Incidence Assumption 2: SS Shifted to Labor**

<table>
<thead>
<tr>
<th></th>
<th>MNF</th>
<th>MWF</th>
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<td>1984 1</td>
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<td>-.035</td>
<td>-.041</td>
<td>.030</td>
<td>-.028</td>
<td>-.031</td>
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<td>1988 1</td>
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<td>-.085</td>
<td>-.020</td>
<td>.067</td>
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<td>.055</td>
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<tr>
<td>1. Exemptions</td>
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<td>-.146</td>
<td>-.066</td>
<td>.158</td>
<td>-.699</td>
<td>.002</td>
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<td>2. No Ceiling</td>
<td>.034</td>
<td>.334</td>
<td>.212</td>
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<td>.144</td>
<td>.032</td>
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<td>3. No Ceiling + Exemptions</td>
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<td>.427</td>
<td>.295</td>
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<td>4. Ltd. Exempts</td>
<td>.076</td>
<td>.463</td>
<td>.305</td>
<td>.171</td>
<td>-.019</td>
<td>.136</td>
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<td>5. Grad Rates</td>
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<td>.533</td>
<td>.073</td>
<td>.437</td>
<td>.140</td>
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<td>6. Grad Rates + Exemptions</td>
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<td>.441</td>
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<td>7. Int/Div</td>
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<td>8. Int/Div + Ltd Exemptions</td>
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<td>1.138</td>
<td>.152</td>
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<td>10. Int/Div + Grad Rates + Exemptions</td>
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<td>.094</td>
<td>.241</td>
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<td>11. Total Income + Ltd Exempts</td>
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<td>-.159</td>
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<td>-.329</td>
<td>-.333</td>
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<td>12. Total Income + Grad Rates</td>
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<td>-.129</td>
<td>-.209</td>
<td>-.114</td>
<td>.941</td>
<td>.079</td>
<td>-.060</td>
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<td>13. Total Income + Ltd Exempts + Grad Rates</td>
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<td>-.166</td>
<td>-.255</td>
<td>-.224</td>
<td>-.608</td>
<td>-.294</td>
<td>-.275</td>
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<td>14. Total Income + Ltd Exempts + Grad Rates</td>
<td>-.273</td>
<td>.016</td>
<td>-.102</td>
<td>.053</td>
<td>-.369</td>
<td>-.024</td>
<td>-.061</td>
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</table>

1 Change relative to 1980
GRAPH 1

(RATES ROUNDED TO 2 DECIMAL PLACES)

SYMBOLS USED:
1980 INCOME TAX RATES *
1984 INCOME TAX RATES +
1988 INCOME TAX RATES X
GRAPH 2A

1980 INCOME VS. COMBINED INCOME AND SS TAX RATES
ASSUMPTION 1: NO SS SHIFTING

SYMBOLS USED:
1980 INCOME TAX RATES *
1980 COMBINED TAX RATES +

TAX RATE

INCOME GROUP
GRAPH 2B

1980 INCOME VS. COMBINED INCOME AND SS TAX RATES
ASSUMPTION 2: SS SHIFTED TO LABOR

SYMBOLS USED:
1980 INCOME TAX RATES *
1980 COMBINED TAX RATES +
Graph 3A

1984 Income vs. Combined Income and SS Tax Rates

Assumption 1: No SS Shifting

Symbols Used:
- 1984 Income Tax Rates
- 1984 Combined Tax Rates

Income Group
GRAPH 3B

1984 INCOME VS. COMBINED INCOME AND SS TAX RATES
ASSUMPTION 2: SS SHIFTED TO LABOR

SYMBOLS USED:
1984 INCOME TAX RATES *
1984 COMBINED TAX RATES +
GRAPH 4B

1988 INCOME VS. COMBINED INCOME AND SS TAX RATES
ASSUMPTION 2: SS SHIFTED TO LABOR

SYMBOLS USED:
1988 INCOME TAX RATES *
1988 COMBINED TAX RATES +
GRAPH 5A
ASSUMPTION 1: NO SS SHIFTING

SYMBOLS USED:
1980 COMBINED TAX RATES *
1984 COMBINED TAX RATES +
1988 COMBINED TAX RATES X

INCOME GROUP
GRAPH 58

ASSUMPTION 2: SS SHIFTED TO LABOR

SYMBOLS USED:
- 1980 COMBINED TAX RATES *
- 1984 COMBINED TAX RATES +
- 1988 COMBINED TAX RATES X
GRAPH 6A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES

PROPOSAL 1: PROVISION OF EXEMPTIONS

ASSUMPTION 1: NO SS SHIFTING
GRAPH 6B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 1: PROVISION OF EXEMPTIONS
ASSUMPTION 2: SS SHIFTED TO LABOR
GRAPH 7A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 2: REMOVAL OF EARNINGS CEILING
ASSUMPTION 1: NO SS SHIFTING

TAX RATE
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05

INCOME GROUP
GRAPH 7B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES

PROPOSAL 2: REMOVAL OF EARNINGS CEILING

ASSUMPTION 2: SS SHIFTED TO LABOR

INCOME GROUP
GRAPH 1A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 3: NO CEILING PLUS EXEMPTIONS
ASSUMPTION 1: NO SS SHIFTING

TAX RATE
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05

INCOME GROUP

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
GRAPH BB

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 3: NO CEILING PLUS EXEMPTIONS
ASSUMPTION 2: SS SHIFTED TO LABOR
GRAPH 9A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES

PROPOSAL 4: LIMITED EXEMPTIONS

ASSUMPTION 1: NO SS SHIFTING

INCOME GROUP

TAX RATE

0.35

0.30

0.25

0.20

0.15

0.10

0.05

0.00

-0.05
GRAPH 9B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 4: LIMITED EXEMPTIONS
ASSUMPTION 2: SS SHIFTED TO LABOR
Graph 10A

Distribution of Combined Income & SS Tax Rates
Proposal 5: Graduated Tax Rates
Assumption 1: No SS Shifting
GRAPH 10B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES

PROPOSAL 5: GRADUATED TAX RATES

ASSUMPTION 2: SS SHIFTED TO LABOR
GRAPH II A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 6: GRADUATED RATES PLUS LIMITED EXEMPTIONS
ASSUMPTION 1: NO SS SHIFTING

TAX RATE
0.35 +
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05

INCOME GROUP
GRAPH IIIB

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 6: GRADUATED RATES PLUS LIMITED EXEMPTIONS
ASSUMPTION 2: SS SHIFTED TO LABOR

TAX RATE
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05

INCOME GROUP
GRAPH 12A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES

PROPOSAL 7: INTEREST AND DIVIDENDS

ASSUMPTION 1: NO SS SHIFTING
GRAPH 120
DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 7: INTEREST AND DIVIDENDS
ASSUMPTION 2: SS SHIFTED TO LABOR
GRAPH 13A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL B1: INTEREST & DIVIDENDS PLUS LIMITED EXEMPTIONS
ASSUMPTION 1: NO SS SHIFTING

TAX RATE

0.30

0.25

0.20

0.15

0.10

0.05

0.00

-0.05

INCOME GROUP
GRAPH 13B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL B: INTEREST & DIVIDENDS PLUS LIMITED EXEMPTIONS
ASSUMPTION 2: SS SHIFTED TO LABOR

INCOME GROUP
Graph 14A

Distribution of Combined Income & SS Tax Rates
Proposal 9: Interest & Dividends Plus Graduated Rates
Assumption 1: No SS Shifting
GRAPH 14B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 9: INTEREST & DIVIDENDS PLUS GRADUATED RATES
ASSUMPTION 2: SS SHIFTED TO LABOR

TAX RATE

0.30

0.25

0.20

0.15

0.10

0.05

0.00

-0.05

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

INCOME GROUP
GRAPH 15A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 10: INT/DIV, GRADUATED RATES & LTD EXEMPTIONS
ASSUMPTION 1: NO SS SHIFTING

TAX RATE
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05

INCOME GROUP
GRAPH 15B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 10: INT/DIV. GRADUATED RATES & LTD EXEMPTIONS
ASSUMPTION 2: SS SHIFTED TO LABOR

TAX RATE

-0.05

0.00

0.05

0.10

0.15

0.20

0.25

0.30

INCOME GROUP
GRAPH 16B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL II: TOTAL INCOME
ASSUMPTION 2: SS SHIFTED TO LABOR

INCOME GROUP
GRAPH 17D

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 12: TOTAL INCOME PLUS LTD EXEMPTIONS
ASSUMPTION 2: SS SHIFTED TO LABOR

TAX RATE
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05

INCOME GROUP
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
GRAPH 18A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 13: TOTAL INCOME PLUS GRADUATED RATES
ASSUMPTION 1: NO SS SHIFTING
GRAPH 19A

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 14: TOTAL INCOME, LTD EXEMPTIONS & GRADUATED RATES
ASSUMPTION 1: NO SS SHIFTING

TAX RATE

0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

INCOME GROUP
GRAPH 19B

DISTRIBUTION OF COMBINED INCOME & SS TAX RATES
PROPOSAL 14: TOTAL INCOME, LTD EXEMPTIONS & GRADUATED RATES
ASSUMPTION 2: SS SHIFTED TO LABOR

TAX RATE

INCOME GROUP
APPENDIX D

MEASUREMENT OF THE TAX BURDEN.
Scholes and Wolfson (1987) have argued that studies of the tax burden, such as the current one, are misleading in that they tend to understate the effective tax burden of the wealthy. They argue that investments which yield tax benefits (i.e., deductions, exclusions, tax credits, etc.) earn a lower return than do similar fully taxable investments and that this decreased return is essentially an indirect tax on the investor. Thus, they argue, it is inappropriate to focus exclusively on the direct tax payments made by the wealthy to the federal government and ignore the decreased returns suffered by the wealthy in reducing that direct tax burden.

As an example, they discuss a taxpayer who invests in tax-exempt bonds. The interest rate differential between the tax-exempt bond and a fully taxable one represents, in their view, an indirect tax paid by the investor-taxpayer. Were the taxpayer not subject to the income tax, he/she very probably would have invested in the higher yield bond rather than the tax-exempt bond. Sholes and Wolfson argue that even though the taxpayer pays no direct tax on the income earned from the tax-exempt bond, he/she suffers a reduction in income (i.e., a lower return) which should be
included in any measure of such taxpayer's tax burden.

This view has not been accepted in this paper. To be sure, this rejection is based partly on practical grounds; the difficulty in measuring such an indirect burden would be enormous. But the main objection is conceptual. There is no doubt that the tax system motivates taxpayers to make investments or expenditures they might not make in the absence of taxation. It has even been suggested that such decisions as whether to remain married or to divorce might be influenced by the spectre of taxation. Certainly, to the extent this influence imposes costs on taxpayers, these costs may be considered a burden of the tax system. But to include such costs, even where they are measurable, in the measure of what is commonly referred to as the tax burden is another matter altogether. To do so implies that one should be indifferent as to whether taxes are paid directly, via a federal tax return, or indirectly via expenditures for municipal bonds and the like. Yet it does not seem likely that this indifference would exist if the entire direct tax burden of the wealthiest groups of taxpayers was replaced with what Scholes and Wolfson refer to as "indirect taxes."

This is because these expenditures, both direct and indirect, are not taxes. They are by no means involuntary, as are taxes. They do not directly enhance federal revenues. Although it is true that many of these
expenditures, if not made privately, would perhaps be required to be paid by the federal government out of total tax revenues, this is certainly not the case with all of them. Indeed, many preferential tax expenditures (e.g., the second home mortgage interest deduction) have arguably survived for primarily political reasons. And with regard to those expenditures which, when made privately, substitute for federal expenditures, it is not clear that they would not be more efficiently administered directly. To the extent that efficiency is diminished by making these appropriations indirectly, through tax incentives, the burden of all taxpayers is increased, not just that of those actually making the direct outlays. Thus, the position was taken in this study that these so-called tax-expenditures are a relevant concern in evaluating efficiency in the tax system but not in evaluating distributional equity in that system.
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