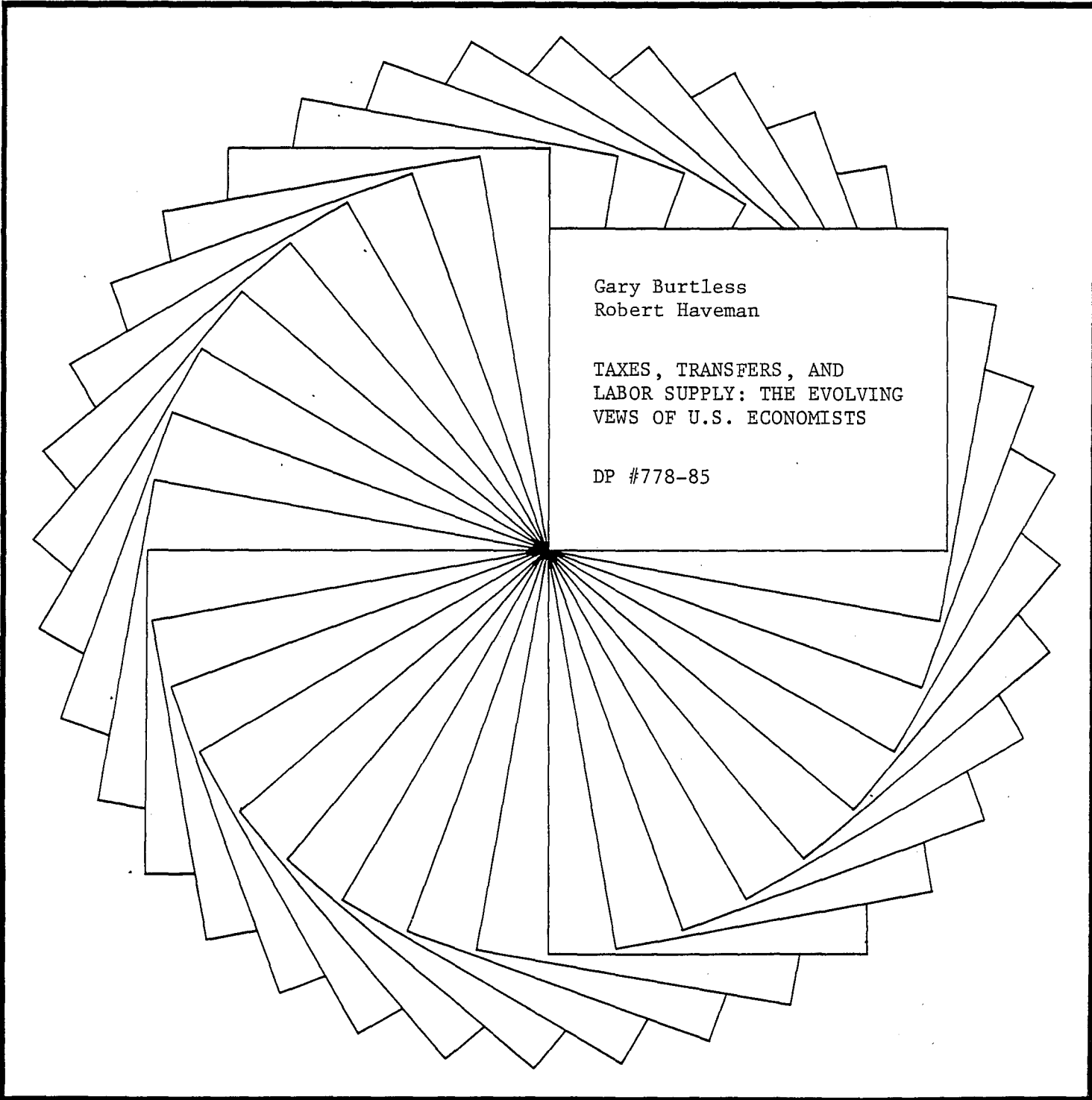


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# IRP Discussion Papers

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TAXES, TRANSFERS, AND  
LABOR SUPPLY: THE EVOLVING  
VIEWS OF U.S. ECONOMISTS

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Taxes, Transfers, and Labor Supply:  
The Evolving Views of U.S. Economists

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## ABSTRACT

This paper surveys recent research findings concerning the size and importance of labor-supply changes resulting from U.S. income taxes and transfers.

Our review of the literature of recent years leads us to conclude that the aggregate amount of work reduction that is attributable to taxes and transfers is relatively modest. Moreover, this reduction may be partly offset by the beneficial effects of the government goods, services, and regulation purchased by taxes. We judge that a reduction in labor supply of from 5 to 12 percent can be considered to result from the existing combination of U.S. taxes and transfers.

Taxes, Transfers, and Labor Supply:  
The Evolving Views of U.S. Economists

INTRODUCTION

Economists have long known that taxes and public transfers distort economic decision-making. The purpose of this paper is to provide a brief survey of recent research findings on the size and importance of the labor-supply distortions arising from U.S. income taxes and transfers. We focus on the United States for two reasons. We are more familiar with American than with Asian and European research on this subject. Also, the views of many U.S. economists have undergone a significant change in the last decade and a half. It can be argued that this change in view has affected U.S. tax law and the provisions of income transfer programs, with important consequences for American economic policy.

This introduction briefly reviews the standard model of labor-supply responses to income taxes and transfers. The next two sections contain a description of some of the recent theoretical and empirical developments in the U.S. literature on taxes, transfers, and work effort. The second of those sections concentrates on summarizing the recent research developments that have caused U.S. economists and policymakers to raise their estimates of the harmful distortions resulting from taxes. We refer to these very high estimates as the "alarmist view." In the fourth section, we provide an evaluation of this new view of taxes and transfers. We argue that the extremely pessimistic claims of some economists and political opponents of the U.S. tax-transfer system spring from a very selective reading of the available evidence about its effects. We conclude

with a brief discussion of the current state of the empirical literature on the labor-supply effects of taxes and transfers. Although numerous empirical problems need to be solved before there is a significant narrowing of the existing range of estimates of effects, it seems likely that the current pessimistic view will itself be superseded.

Why is labor supply affected at all by taxes and transfers?

Neoclassical economic theory provides the most straightforward basis for answering this question. For our purposes it is convenient to describe the theory by reference to a simple diagram. Figure 1 represents the trade-off between hours of work (on the horizontal axis) and net income (on the vertical) under a stylized tax and transfer system. The straight line from the origin, OBCG, represents the trade-off between work and income in the absence of taxes and transfers; its slope is the worker's gross wage rate. The solid kinked line ABCDE represents the worker's net income possibilities at each level of work effort in the presence of taxes and transfers. Along the segment AB the worker is eligible to receive a transfer which declines at a constant rate for every one-dollar rise in gross wages; along the segment BC the worker receives no transfers and pays no income tax; along the segments CD and DE the worker's wages are subject to an income tax with progressively higher rates at higher income levels. In the usual model, income, or Y, is considered a "good," and hours of work, H, is considered a "bad." Each worker has well-defined, convex preferences across all potential combinations of Y and H. Workers choose their level of work and income by maximizing utility over their attainable budget set, here represented by the combinations of H and Y below and to the right of ABCDE.<sup>1</sup>

Figure 1

Work-Income Tradeoff under Stylized Tax-Transfer System

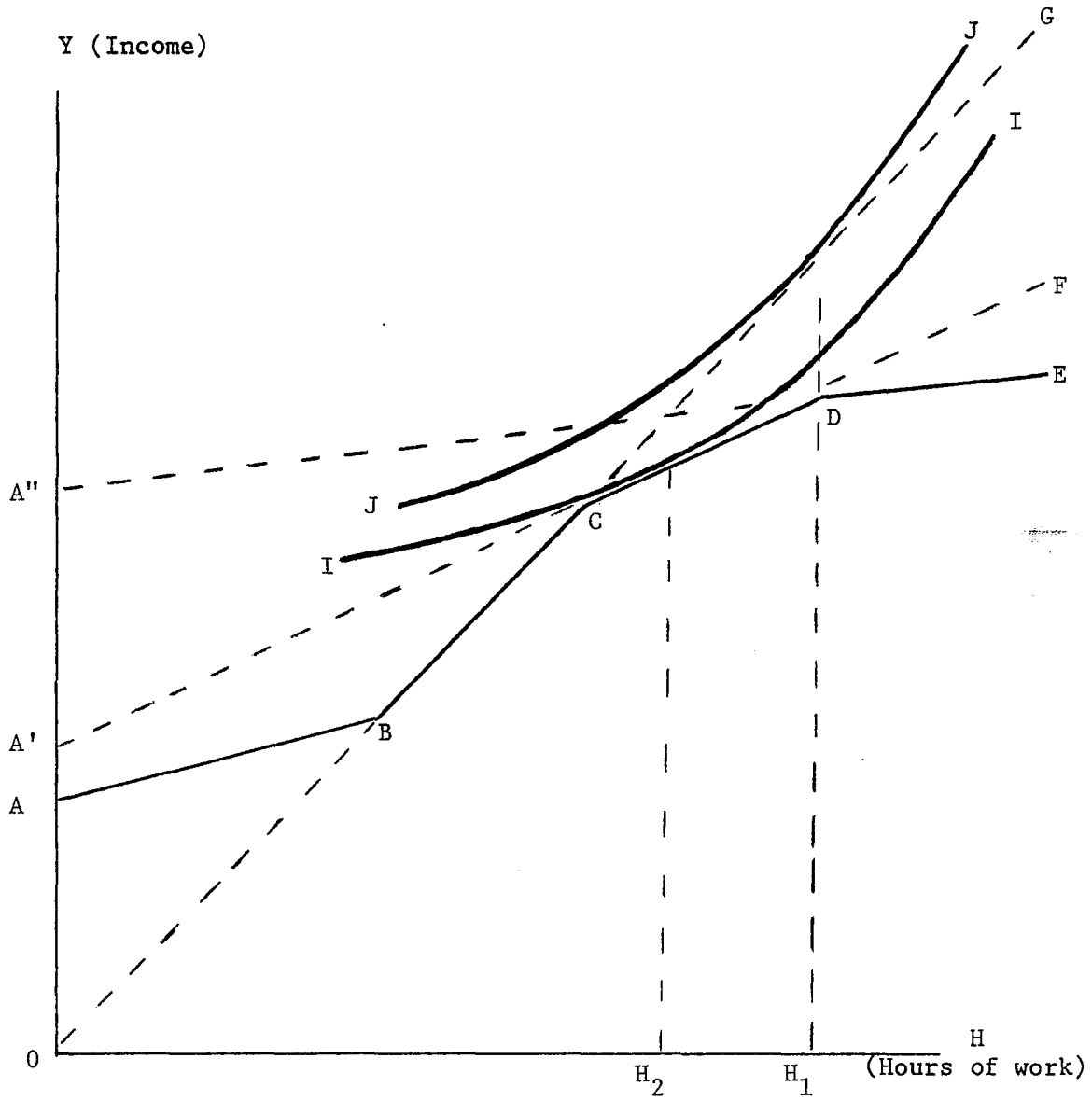


Figure 1 shows the economic distortion arising from this stylized tax-transfer system. The curved line JJ represents the indifference curve of a worker who is maximizing utility in the absence of taxes and transfers. This worker chooses the combination of H and Y lying at the tangency of JJ and the budget constraint OBCG. The curved line II represents the indifference curve of the same worker as he maximizes utility in the presence of the tax-transfer system. The selected level of H is below that chosen when taxes and transfers are absent, though in theory H could be either higher or lower depending on the work-income preferences of the affected worker. Only along the segment AB does economic theory provide an unambiguous prediction about the effect of the tax-transfer system on labor supply, and even there the prediction depends on the assumption that leisure (which is the complement of work) is a normal good. If leisure is normal--that is, a good which workers consume more of as their resources rise--the tax-transfer system must unambiguously reduce labor supply of workers who would otherwise locate along the segment OB.

The analysis has thus far concentrated on the trade-off between work and income in a single period, say, a week or a year. The analysis can be extended in a straightforward way to take account of work responses to taxes and transfers over several periods, including the period before and after retirement. It can also be extended, though less easily, to reflect the impact of taxes and transfers on education, training, and other human capital investment decisions. These extensions are necessary to infer the theoretical effects of taxes and transfers over the lifetime, which are especially important for programs such as social security

retirement and disability benefits which have an important lifetime aspect. The lifetime effects of these programs are often theoretically indeterminate, just as are the effects of the stylized tax and transfer system just considered. The crucial question, then, is an assessment of the empirical effects of taxes and transfers on behavior. We next consider the changing views of U.S. economists on this question.

## EVOLUTION OF RESEARCH ON THE LABOR-SUPPLY EFFECTS OF TAXES AND TRANSFERS

### The Pre-1970 Consensus

Before 1970 the potential effects of taxation and transfers were widely recognized, but empirical estimates of their effects were rare. The earliest U.S. studies of the work response to taxes were essentially void of theory. Often the studies were based on survey responses to questions on the oppressiveness of high marginal taxes. This type of research was summarized by Pechman (1971) as follows:

The evidence suggests that income taxation does not significantly reduce the amount of labor supplied by workers and managers. . . . Nearly all people who are asked about income taxation grumble about it, but relatively few say that they work fewer hours or exert less than their best efforts to avoid tax (p. 66).

Somewhat more effort had been devoted to estimating the labor-supply response to actual and proposed income transfers, but even in this area the state of knowledge was quite primitive in 1970.

### Early Econometric Studies: 1970 to the Mid-1970s

Starting around 1970, U.S. economists and statisticians began investigating labor-supply behavior using the large-scale microeconomic



data sets that were just becoming available. The research usually focused on the low-income population. Studies were generally based on multiple regression analysis, with annual hours of work as the dependent variable and the observed gross wage rate and non-work-related income as the relevant independent variables. Cain and Watts (1973) summarized this early research, and expressed frustration with the wide variability of the estimated magnitudes of income and gross wage effects. The largest estimates of response suggested that the potential effects of existing and proposed transfer programs should be of substantial public concern, but the smaller estimates implied an opposite conclusion.

Many of the early studies were motivated by political interest in reform of the complex U.S. welfare system, which provides minimal incomes to otherwise destitute adults who have children. This system has attracted academic attention on a scale wholly disproportionate to its modest cost and size. Proposals to reform the system led the federal government to undertake four negative income tax (NIT) experiments, which represent some of the largest and most costly economic research projects ever undertaken. The experiments used controlled random assignment to test a variety of programmatic alternatives to the existing U.S. welfare system. The experiments essentially varied the slope and intercept of the first budget segment in Figure 1, that is, the location of the budget segment AB. Economists measured the responses of individual workers to these variations in marginal tax rate and basic income support levels and from those responses inferred the aggregate labor supply function of low-income workers.

The findings of the NIT experiments have been summarized in Moffitt and Kehrer (1981) and U.S. Department of Health and Human Services

(1983). There is little doubt that the experiments reduced the amount of uncertainty about the responsiveness of low-wage workers to taxes and transfers. The results from the largest and most sophisticated of the experiments showed that tested NIT plans caused substantial reductions in labor market activity, particularly for those workers enrolled in longer-duration (five-year) plans and for youths and women. Prime-aged men reduced their annual hours of work by 9 or 10 percent; their spouses reduced annual hours by 17 to 20 percent; and single women heading families reduced annual hours by more than 20 percent--by as much as 28 to 32 percent in the longer-duration plans. Much of the work reduction occurred in the form of withdrawals from employment rather than marginal reductions in weekly work effort. In the case of women, most of the reduction was caused by withdrawal from active labor force participation. The NIT experiments provided convincing evidence of the potential magnitude of work reductions arising out of generous income transfers and sharply higher marginal tax rates on earnings. Critics of income assistance seized upon these results to argue against increases in the income support provided to the U.S. poor or even to urge abolition of programs that presently aid the needy (see Murray, 1984).

#### Research Findings after the Mid-1970s

Partly as a result of the resources invested in the NIT experiments, U.S. research on labor supply has grown rapidly in depth, breadth, and technical sophistication over the past decade. The NIT experiments, as well as a number of large-scale, highly detailed, longitudinal surveys, permitted economists to examine for the first time the patterns of individual labor supply over the life cycle and to measure the impacts of

wages, taxes, transfers, and other sources of unearned income. The rapid development of theory and estimation technique has been described in detail by Killingsworth (1984). Three of the most significant developments have been in accounting for sample self-selection, life-cycle decision-making, and the nonlinearity of the work-income budget constraint (i.e., constraint ABCDE in Figure 1). The last two issues have been particularly important in analyzing the effects of social security retirement benefits and the progressive income tax on labor supply behavior.

In his exhaustive survey, Killingsworth (1984) noted several highlights of the most recent generation of labor-supply studies. As in the earlier generation of studies, men's labor supply has consistently been found to be less sensitive to wage-rate and unearned income variations than has women's labor supply. The more recent studies have found larger female labor-supply elasticities than the earlier studies. The latter research, perhaps because it is based on more elaborate specifications of response, has found important discontinuities in the labor-supply schedule, indicating a significant reservation level in desired hours. Killingsworth reports only small progress in the nonexperimental studies in narrowing the range of estimated responsiveness. While these results contain no direct evidence on the labor-supply effects of taxes and transfers, they are suggestive. The high wage responsiveness of women indicates that changes in marginal rates will elicit sizable effects in their labor supply, and the findings of the NIT experiments tend to confirm this result. In fact, the recent estimates of response could easily be used to simulate the effect of changes in the tax and transfer system, and in several studies the results have been used in exactly this way.

But the simulated effects will naturally reflect the same wide variance of aggregate response--and the same potential biases--as the parameter estimates themselves.

#### THE "ALARMIST VIEW" AND ITS ORIGINS

As the technical and statistical sophistication of the empirical studies has grown and as the new results have been used in national simulations, some economists have become persuaded that the adverse effects of taxes and transfers are large. This is the alarmist view alluded to in the Introduction. The findings of the NIT experiments of course attracted wide attention, and many viewed the labor-supply responses reported there as serious threats to a productive economy, and as encouraging the growth of a dependent class (see Anderson, 1978, and Murray, 1984). The experimental results showed that the earnings of a typical low-income family would fall by \$0.25 to \$0.50 for every \$1.00 rise in income transfer support provided by the government, a finding that lent some support to the alarmist view.

Some studies of the U.S. social security system have also found very large effects of retirement benefits on labor-supply behavior. The labor force participation of older U.S. men has fallen substantially in recent years. In the 30 years after 1950, the participation rate of men over 65 fell by more than half, from 46 percent to 20 percent. In the same period, the rate for men aged 55 to 64 fell from 87 percent to 73 percent. Over the same 30-year interval, real social security benefits were rising rapidly and eligibility for benefits was extended to a much wider population. Some economists inferred causality and asserted that

the rise in social security was the main factor behind the trend toward earlier retirement (see for example Boskin, 1977). It has also been claimed that increasingly generous social security disability benefits have caused the decline in older male labor force participation, particularly among blacks (see Parsons, 1980) and that welfare benefits for single parents with children have led to a low labor force participation rate and reduced hours of work among single women. Unemployment insurance has been the subject of a large number of statistical studies, most of them concluding that the U.S. system contributes significantly to raising reported unemployment or reducing employment (see Danziger, Haveman, and Plotnick, 1981). Two U.S. economists have even claimed that generous unemployment benefits were the main cause of high and persistent British unemployment during the Great Depression (Benjamin and Kochin, 1979). Finally, a group of U.S. and Dutch economists studied the effect on labor supply of the growth of their nation's entire transfer systems over the decade of the 1970s. The reported impacts were large for the United States; transfer system growth was estimated to have reduced aggregate desired labor supply by 0.8 percent per year over the decade of the 1970s (Wolfe et al., 1984).

One of the most significant developments in recent years has been the rise in the estimate of the economic distortions caused by the income tax system. In 1981 Jerry Hausman published a landmark study of the effect of U.S. income taxes on labor-supply behavior of American adults. The new estimation methodology was based on the theory and statistical techniques developed to analyze the NIT experiments (in particular, Hall, 1975 and Burtless and Hausman, 1978). Before the early 1970s, the income tax was simply viewed as driving a wedge between the market value

of a person's work and the net wage the worker could take home. A 40 percent marginal tax, for example, reduces the after-tax value of marginal work by 40 percent. Since adult men were thought to be essentially unresponsive to variations in marginal wage rates, it was widely believed that they were comparatively unaffected by income taxes.

However, careful examination of Figure 1 reveals that this analysis is an oversimplification. A progressive income tax not only drives a wedge between market wages and marginal take-home pay, but also provides an implicit "lump-sum transfer" to workers who pay progressive income taxes on marginal earnings. For example, the worker in Figure 1 who maximizes utility along the third budget segment, CD, can be viewed as responding to a tax system that implicitly pays a lump-sum transfer equal to A' and then, for every one-dollar rise in gross wage income, taxes this amount away at a constant marginal rate equal to the rate charged along the budget segment CD. The worker's labor supply is affected by the amounts of both the marginal tax wedge and the implicit lump-sum transfer. Hausman found that the disincentive effects of these implicit lump-sum transfers were quite large, for men as well as for women. U.S. prime-aged husbands are estimated to reduce their work effort in response to the U.S. income tax by about 8 percent in comparison to their behavior in a no-tax world, and the deadweight loss associated with this reduction is about 5 percent of pretax earnings. Stated another way, the deadweight loss arising from the existing progressive income tax system for U.S. men amounts to more than 20 percent of the value of the taxes raised. For women, with larger responses than men, the welfare loss of the tax system is an even greater share of the collected revenue.

This very large estimate of the economic distortion resulting from U.S. taxes has caused many economists to reconsider their assessment of the costs of raising taxes. In addition, other research projects have contributed to the impression that income taxes greatly distort labor-supply decisions. Simulation studies of the effect of the Swedish tax system by Stuart (1981) and of the U.S. system by Stuart (1984) and Browning and Johnson (1984) have drastically raised previous estimates of efficiency losses caused by taxes.

In another development reinforcing the alarmist view, some U.S. economists now deny there is any theoretical ambiguity about the effects of taxes on aggregate labor supply. According to the earlier view, tax increases have a theoretically indeterminate effect on work effort. Because the net price of work is reduced, workers will want to reduce their work effort (this is the substitution effect), but because they have less after-tax income they may wish to work longer hours to make up the lost income (the income effect). The two effects may partly or wholly offset one another. According to the new view, the two effects do not offset one another in the aggregate, because what some people lose in net income is returned to others (or to themselves) in the form of increased transfers or government goods and services. Only the substitution effect matters. Hence, the effect of a tax increase must be an unambiguous reduction in aggregate work effort.

One example to illustrate the new view is an increase in the positive income tax used to finance an increase in transfers. (In terms of Figure 1, the budget segments CD and DE are moved down and to the right in order to pay for an upward movement in segment AB.) If the increases in transfers received by low-income workers are exactly equal to increases in

taxes paid by high-income workers, the new theorists claim there is no income effect in the aggregate. The income effects experienced by workers who lose net income are exactly offset by those experienced by workers who receive additional transfer benefits (see Gwartney and Stroup, 1983).

#### THE BASIS FOR THE "ALARMIST VIEW": SOME CAUTIONS

The labor supply research of the past 15 years has illuminated a wide variety of subjects that were previously little understood. If the views of U.S. economists have changed, at least part of the reason is that there is now far more knowledge about the subject than existed in the 1960s. However, contrary to the alarmist U.S. view that taxes and transfers impose intolerable burdens on economic efficiency, we believe that much of the evidence points to a far less pessimistic conclusion. While it is not our intention to give either a detailed critique of all the underpinnings of the alarmist view or a review of the contrary evidence, we will briefly consider a few of the most basic points and present a catalogue of the major issues that remain. The effect of this review is to erode one's confidence that aggregate U.S. labor supply has been dramatically reduced by the combined impacts of government taxes and transfers.

First, not even the statistical evidence in the studies showing the largest labor-supply responses supports the most extreme claims about the disincentive effects of taxes on work behavior--namely, that a reduction in present U.S. rates would result in an increase in tax revenues from labor income. While Arthur B. Laffer is almost certainly correct in his



belief that, at a sufficiently high marginal tax rate, further increases in the rate would depress government revenue by discouraging economic activity, he and his followers are incorrect in arguing that U.S. taxes are sufficiently high for that prediction to be true at current rates (see Fullerton, 1982, Hausman, 1983, and Browning and Johnson, 1984).

Second, contrary to the recent claim that income effects are irrelevant in computing the aggregate response to taxes, it turns out that the size and distribution of income effects are critical in evaluating the sign of the aggregate response.<sup>2</sup> For example, referring again to an increase in positive income taxes used to finance an increase in transfer payments, it is usually the case that additional taxes will be levied on workers with high earnings while additional benefits will be distributed to people with very low earnings (or possibly no earnings at all). The additional income received by people with very low earnings will induce them to reduce their hours of work, but the amount of hours reduction will be limited to the amount they already work--no one can work less than zero hours. By contrast, higher-income earners, who suffer an after-tax income loss, will be induced by the income effect to work additional hours, and there is no relevant limit to the amount of extra hours they can work. For that reason, the hours gains induced by the income effect on high-earnings workers may easily exceed the hours reductions experienced by low-earnings workers. If work disincentives of taxes and transfers are concentrated on the fraction of the population that is unable to make substantial work-effort reductions, and if work-incentive effects are concentrated on those who can substantially raise work effort, a tax rise that is used to finance a transfer increase may

theoretically boost aggregate labor supply.<sup>3</sup> Hence, the sign as well as the size of the aggregate response is indeterminant a priori.

Third, a careful evaluation of the aggregate labor-supply responses to taxes and transfers should rest on the full body of available evidence, and not only on the estimates from a few polar studies. When economists have attempted to provide an assessment of the labor-supply responses to taxes and transfers from the published studies of such effects, they have arrived at far more modest numbers than those cited by advocates of the alarmist view. In the most frequently cited review of the effects of transfers, Danziger, Haveman, and Plotnick (1981) summarize the evidence on the labor supply effects of social security, unemployment insurance, and welfare:

[It] suggests that because of labor supply reductions by transfer recipients, total [desired] work effort in the economy was 3.3 percent less than it would have been. Adding the reductions due to the other [transfer] programs . . . gives a total reduction of 4.8 percent. . . . In an economy with involuntary unemployment, however, not all of this supply would be employed. If the unemployment rate were 7.0 percent, and if the increased labor supply of transfer recipients would find employment at a rate equal to that of other workers, the net loss of employment time would be about 4.5 percent. Because those receiving transfer benefits tend to have below average wage rates, the loss of total earnings is probably about 3.5 percent (pp. 998-999).

Using a different approach to the evidence, Lampman (1984) attempted to estimate the aggregate labor-supply impact since 1950 of the growth in income transfers and the taxes required to finance them. From his survey of the empirical labor-supply literature, he concluded that the increase in American social welfare benefits from an amount equal to 9 percent of GNP in 1950 to 21 percent of GNP in 1976 caused the quantity of labor supplied to be 7 percent less than it would otherwise have been.

Browning and Johnson (1984), whose study found very large welfare effects of marginal changes in taxes and transfers, estimate the total effect of a stylized version of the U.S. tax-transfer system to be a reduction in aggregate supply of about 5.2 percent. This appears roughly comparable to the estimates of Danziger, Haveman, and Plotnick and of Lampman.

Fourth, although the NIT experiments carry heavy weight in any overall evaluation of labor supply-effects, owing to the random assignment of observations and the controlled and systematic variation of treatment, we must use caution in inferring the actual effects of the tax-transfer system from them. The experiments offered extremely generous basic payment levels, far more generous than those available to low-wage U.S. workers under the existing transfer system. Hence, the large recorded average effect was a response to a large average stimulus. Moreover, the NIT experiment benefits were awarded to all low-income workers in the treatment group, irrespective of their family situation, work capacity, and work experience. The current U.S. transfer system targets its benefits on categories of individuals not able or expected to work--women with small children, the retired, and the disabled. In spite of the apparently large average responses observed in some of the experiments, scholarly summaries of the results have usually reached the following conclusions: (1) the observed income and substitution elasticities fall well within the range that would have been predicted prior to the experiments; (2) the responses probably fall in the lower part of that range; and (3) the range of responses across the different NIT experiments was far narrower than the range of predictions of response that existed prior to the experiments (see Moffitt and Kehrer, 1981). Thus, the experimentally estimated elasticities fall within a signifi-

cantly narrower range than nonexperimentally estimated elasticities, and they suggest smaller responses than would have been predicted from the average of nonexperimentally obtained estimates.

Some of the alarmist interpreters of the NIT experiments (e.g., Anderson, 1978, and Murray, 1984) have argued that the estimated responses must understate the true long-run effects of the tested NIT programs, because the programs were limited in duration. They suggest, for example, that individuals need time to understand and respond to a new set of work incentives. In addition, a temporary experiment provides a much smaller change in lifetime income than would a permanent program of equivalent generosity, so the response must logically be greatly understated. However, systematic analysis of some of these biases has not confirmed the alarmists' assertions. In the relevant range of program generosity, there is another bias that partly or wholly offsets the biases just mentioned. Since the experiments were temporary, they essentially offered a "sale" on leisure, which participants were forced to take advantage of within a concentrated period. This encouraged greater responsiveness than would have been observed in a permanent program (see Burtless and Greenberg, 1982).

Fifth, the basic underpinnings of both the theory and empirical work on labor-supply response is a much less settled matter than is generally recognized, and this may be especially true of those studies on which the alarmists most heavily rely. In the following summary, we shall briefly mention some of the major unsettled issues, giving special emphasis to problems relevant to those studies showing the largest labor-supply responsiveness.

- While the study by Hausman (1981) is justly regarded as the most careful and innovative examination of tax effects on U.S. labor supply, it has not yet received the systematic scrutiny that is merited by its importance. Burtless (1981) and Heckman (1983) have called attention to technical features of Hausman's model that require especially careful sensitivity analysis; several of these features might lead to an overestimate of responsiveness. Until this kind of analysis is performed, Hausman's findings will be regarded as provisional by most quantitative labor economists.<sup>4</sup>
- Actual estimates of labor supply parameters (income and substitution effects) typically rely on untested assumptions about the attributes of work life: that the work day and the work week are flexible; that the wage rate is exogenous to the choice of work effort; that there are no time and money costs associated with working; that the budget line is continuous, though perhaps nonlinear; and that disequilibrium and rationing are absent from labor markets. While individual studies have attempted to accommodate one or even a few modifications in these assumptions, there is little evidence on how estimated parameters would change if realistic economic conditions were better reflected in the empirical models.
- There exist a variety of technical issues in the econometric estimation of structural labor-supply parameters that remain unresolved and on which little consensus exists. These include the modeling of labor-supply decisions taken in the context of a household with interdependent members, the specification of the accounting period for measuring labor-supply and tax and transfer incentives (and, related to this, the specification of a dynamic labor-supply framework), and the accurate measurement of the marginal tax rate, exogenous unearned income, and desired--as opposed to observed--work effort in existing microeconomic data bases.
- A number of additional estimate issues concern the modeling of responses to taxes and transfers. In the presence of tax evasion and welfare fraud, how can the "true" marginal wage rate be measured? How can the actual availability of public transfers be imputed? How can a budget line be accurately specified when particular tax and transfer programs are associated with a variety of linked benefits or characteristics which are difficult to measure, e.g., stigma, implicit subsidies for training and education, and guarantees of generous subsidies of medical care?
- Furthermore, a complete assessment of the aggregate response to taxes must rest upon an accurate estimate of the work-effort effects of the government goods and services that are provided through taxes. These effects may be either positive or negative; at present their direction and size is a complete mystery.

In sum, the state of empirical work in this area remains unsettled, in spite of important advances both in theory and empirical estimation over the past decade. When we consider, in addition, the wide variation in existing structural estimates of labor-supply responses to taxes and transfers, a temperate position would be a great deal more cautious than the calls for wholesale government retrenchment implicit in the writings of some alarmists.<sup>5</sup>

Sixth, while it may not be widely recognized, many of the alarmist findings about U.S. work response to taxes and transfers have not been confirmed upon subsequent reanalysis. For example, the majority of recent studies has found that social security retirement benefits contributed only modestly to the trend toward earlier retirement among U.S. men. This finding has been replicated in recent cross-sectional and time-series studies, most of which have been far more technically sophisticated than the earlier research on this subject.<sup>6</sup> While alarmists are quick to note the sharp decline in older male labor force participation since World War II, they seldom if ever mention that participation of men over 65 fell by over one-third between 1900 and 1940--well before social security could have affected labor supply. The alarmist view of the effects of disability insurance on labor force participation has also been called into serious question by Haveman and Wolfe (1984) and Haveman, Wolfe, and Warlick (1984). While not all readers will share our evaluation of the relative merits of the various studies of the social security retirement and disability programs, it is nonetheless the case that alarmist results have generally been found in only a minority of studies, and those findings have not stood up well to careful reanalysis.

Finally, we will mention one important kind of evidence that is often ignored. The historical trends in U.S. labor supply do not appear to conform especially well to the predictions of the alarmist view. This seems to us a fundamental problem with the new view. It is well known that American tax levels and transfer benefits have grown rapidly over the past three decades. While it is true that the labor force participation of men, especially older men, has fallen over that period, this decline has been more than offset by a sharp rise in the labor force participation rate of American women. From 1948 to 1984, the participation rate of adult men fell by 10 percentage points, mostly due to a sharp decline at older ages, but the rate for adult women rose by 22 percentage points. The overall employment rate rose by 3 percentage points, and the participation rate by 5.5 points. This growth in paid employment and labor force participation hardly seems consistent with the view that the growing burden of taxes and rising disincentives from transfers have markedly depressed labor supply. The length of the average work week has fallen slightly and the number of work days per year has probably fallen fairly substantially since World War II, thus offsetting the rise in aggregate labor force participation. But the length of the work year was falling long before taxes and transfers became an important part of U.S. economic life. In fact the average work-year length fell faster during the 40 years leading up to World War II than it has in the years since (see Lebergott, 1964, and U.S. Bureau of the Census, 1975).

## CONCLUSION

Our survey of the recent literature does not lead us to dismiss out of hand the prudent concerns of some that taxes and transfers have depressed total labor supply in the United States and that reforms in both could call forth additional work effort (Haveman, 1984). But the amount of aggregate work reduction that is attributable to the tax and transfer system appears comparatively modest. Furthermore, this reduction may be partly offset by the beneficial effects of the government goods, services, and regulation that are purchased by taxes. On the basis of the best available evidence, we judge that a reduction in labor supply of perhaps 5 percent and no more than 12 percent can be attributed to the existing combination of government taxes and transfers. Hence, we can reject the claims of extreme pessimists that American work habits and initiative have been grossly undermined by the present level of taxes and transfers. Of course, opinions differ as to what constitutes a large reduction of work effort and economic well-being attributable to taxes and transfers. Clearly, some observers regard any reduction at all as intolerable. In our view, the benefits attributable to government taxes and transfers--reduced uncertainty, reduced poverty and inequality, increases in human capital investment, increases in economic stability, and the facilitation of technological change--far exceed the probable losses, at least in the United States. Nonetheless, the U.S. debate over the labor supply effects of taxes and transfers should remind us that at the margin the trade-off between benefits and costs is likely to be far less favorable.



## Notes

<sup>1</sup>We emphasize that Figure 1 provides a highly stylized version of the existing tax and transfer system. There are multiple tax schemes (federal, state, and local income tax programs, plus the social security payroll tax) and a number of complicated transfer programs for low-income families. It is unlikely that workers completely respond to or even understand the highly complex constraint they actually face; they probably respond to a simplified linearization of that constraint.

<sup>2</sup>Strictly speaking, we are referring to the partial equilibrium effect on aggregate desired labor supply.

<sup>3</sup>Betson and Greenberg (1984) have recently performed population simulations for the United States using labor supply estimates from the NIT experiments. Their simulations demonstrate that there are many tax-financed transfer increases which raise aggregate labor supply, contrary to the claim of Gwartney and Stroup (1983).

<sup>4</sup>Among the technical points raised are the following: (a) the estimated income effect for men is larger than estimates obtained by others using the same or similar data sets; (b) the technique of permitting a truncated normal distribution of work-effort preferences may permit a limited number of observations that have extremely high responsiveness to substantially affect the estimate of mean response; (c) the estimate of responsiveness may be biased upward by the truncation of response estimates to avoid the possibility that leisure is an "inferior good" for any observation in the sample; and (d) tax evasion and welfare fraud imply that the nonlinear budget constraint cannot be accurately specified (see next text paragraph).

<sup>5</sup>With respect to the post-1975 research on labor supply, Killingsworth (1984) summarizes what we have learned: "Second generation research indicates that . . . income and substitution effects are considerably greater for women than for men, but this simply confirms first generation findings. If first generation results provide a dauntingly wide range of estimates of such responses, however, the same is pretty much true of second generation work" (p. 205). The wide variation in the estimates of labor supply responses to transfer programs was also noted by Danziger, Haveman, and Plotnick (1981).

<sup>6</sup>The cross-sectional studies include Burkhauser and Quinn (1983), Burtless and Moffitt (1985), Diamond and Hausman (1984), Fields and Mitchell (1984), and Gustman and Steinmeier (1983). The time-series study is by Moffitt (1985).

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